SCHOOL OF MEDICINE

UNIVERSITY
OF MARYLAND
1984-86

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE 1984-86

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ENDOWMENTS, GIFTS AND PRIZES

The John Beale Davidge Alliance

Alumni and friends who have made generous contributions to the School of Medicine are recognized through membership in the John Beale Davidge Alliance. The exceptional support provided by the members enables the medical school to continue the tradition it began in 1807 of educating physicians and providing care for the people of the state of Maryland. Established by the School of Medicine and the Medical Alumni Association, the John Beale Davidge Alliance honors the leadership of Dr. John Beale Davidge, first dean of the School of Medicine.

A plaque prominently located near the lobby entrance of the Frank C. Bressler Research Building lists the members of the Alliance.

Dr. Robert A. Abraham
Dr. Samuel J. Abrams
Dr. Mortimer D. Abrashkin
Dr. James R. Appleton
Dr. Neil R. Arbegast
Dr. Marvin S. Arons
Dr. Richard M. Baldwin
Dr. and Mrs. Frederick J. Balsam
Miss Mary Arden Batch
Dr. Walter J. Benavent
Dr. Eugenio E. Benitez
Dr. Herbert Berger
Dr. Leonard P. Berger
Dr. Carl F. Berner
Dr. Frank C. Bressler
Dr. and Mrs. Grafton R. Brown
Dr. Neal C. Capel
Dr. Joseph W. Cavallaro
Dr. Cornelia P. Channing
Dr. Mary Dorcas Clark
Dr. and Mrs. Elwood A. Cobey
Mr. and Mrs. William W. Cobey
Dr. Joseph D'Antonio
Dr. and Mrs. Donald H. Dembo
Dr. and Mrs. John M. Dennis
Dr. John N. Diaconis
Dr. Eva F. Dodge
Dr. John C. Dumler
Dr. William J. R. Dunseath
Dr. Aaron Feder
Mr. and Mrs. Alvin B. Filbert
Dr. Abraham H. Finkelstein
Dr. Denis Franks
Mrs. Doris N. Frieman
Dr. Sylvan Frieman
Dr. Jose R. Fuentes
Dr. Eli Galitz
Dr. Lawrence A. Galitz
Dr. Richard M. Galitz
Dr. and Mrs. Joseph B. Ganey
Dr. Charles Getz
Miss Dorothy Getz
Dr. Charles E. Gill
Dr. Paul H. Gislason
Dr. Leonard W. Glass
Evelyn Grollman Glick
Dr. Robert B. Goldstein
Dr. Aaron I. Grollman
Dr. Jaye Grollman
Simon and Bessie Grollman
Dr. Julius E. Gross
Dr. I. William Grossman
Miss Anna Gudelsky
Mrs. Bertha Gudelsky
Mr. and Mrs. Erwin Gudelsky
Mr. and Mrs. Homer Gudelsky
Dr. Meredith I. Hale
Dr. Wilson A. Heefner
Dr. Jeannette R. Heghinian
Mr. Samuel H. Helfrich, Jr.
Dr. Charles M. Henderson
Dr. W. Ray Hepner, Jr.
Dr. Kenneth M. Hoffman
Dr. Virginia Huffer
Dr. Gerald S. Johnston
Dr. Jack A. Kapland
Dr. August D. King, Jr.
Dr. Bernard S. Kleiman
Dr. Jeffrey A. Kleiman
Dr. Lloyd I. Kramer
Dr. and Mrs. John C. Krantz, Jr.
Drs. Vinod and Bina Lakhanpal
Dr. Byruth K. Lenson-Lambros
Dr. William S. M. Ling
Dr. Frank C. Marino
Dr. Herbert M. Marton
Mr. and Mrs. Leonard Mathias
Dr. Charles W. McGrady
Dr. Kathleen R. McGrady
Dr. and Mrs. Aaron H. Meister
Dr. Bernard Gerald Milton
Dr. George L. Morningstar
Dr. and Mrs. Joseph Nataro
Dr. Dennis A. Niner
Dr. Joseph C. Orlando
Dr. Selvin Passen
Dr. and Mrs. George C. Peck
Mr. Parker H. Petit
Dr. and Mrs. Ross Z. Pierpont
Dr. Frederick W. Plugge, IV
Dr. Richard M. Protzel
Dr. Krishna C. V. G. Rao
Mr. Hallie P. Rice
Dr. Milton R. Righetti
Mrs. Elizabeth Rehm Robinson
Dr. Harry M. Robinson, Jr.
Dr. Ramon F. Roig, Jr.
Dr. and Mrs. Robert R. Rosen
Dr. Robert L. Rudolph
Dr. Wallace H. Sadowsky
Mr. and Mrs. C. E. Scarlett, Jr.
Dr. and Mrs. Morton Schwartz
Dr. William M. Seabold
Dr. Albert Shapiro
Dr. Walter M. Shaw
Dr. Howard C. Silver
Mr. Richard Singer
Dr. J. Walter Smyth

Dr. Milton H. Stapen
Mrs. Mary E. Staples
Dr. Benjamin M. Stein
Dr. Douglas N. Stein
Dr. Samuel Steinberg
Dr. Kristin Steuber
Dr. and Mrs. John F. Strahan
The Jimmie Swartz Foundation
Dr. Kyle Y. Swisher, Jr.
Drs. Ellen and Bruce Taylor
Dr. Francis N. Taylor
Dr. Irving J. Taylor
Dr. Ronald J. Taylor
Dr. Thomas S. Templeton, II
Dr. Rufus Thames
Dr. Charles R. Thomas
Dr. A. Frank Thompson
Dr. Raymond K. Thompson
Dr. Nevins W. Todd, Jr.
Dr. Max Trubek
Trustees of the Endowment Fund, UMAB
Dr. Michael J. Vinciguierra
Dr. H. Leonard Warres
Dr. Hans R. Wilhelmsen
Dr. Walter M. Winters
Dr. William I. Wolff
Dr. Celeste L. Woodward
Dr. Theodore E. Woodward
Dr. H. Boyd Wylie
Dr. William Yudkoff

School of Medicine Endowed Distinguished Lectures

Name of Lecture	*Area*
Thurston R. Adams	Surgery
Herbert Berger	Internal Medicine
Robert W. Buxton	Surgery
Myer and Etta Dana	Psychiatry
C. Reid Edwards	Surgery
Abraham H. Finkelstein Memorial	Pediatrics
Julius Friendenwald	Medicine
Charles Getz	Medicine
Harry C. Hull	Surgery
Bernard S. Kleiman	Otolaryngology
Stephen E. and Jeffrey A. Kleiman	Dental School and School of Medicine
John C. Krantz	Pharmacology and Experimental Therapeutics
Nicholas C. and Helen K. Mueller	Surgery
Maurice C. Pincoffs	Medicine
Joseph E. Smadel	Medicine
Samuel Steinberg and H. Boyd Wylie	Biochemistry
Henry J. Walton	Radiology
H. Leonard Warres	Radiology
George H. Yeager	Surgery

School of Medicine Distinguished Lectures

Name of Lecture	*Area*
Alice Messinger Band	Hematology
Harle V. Barrett Memorial	Epidemiology and Preventive Medicine
Frank C. Marino	Surgery
Jerome K. Merlis	Neuroscience
Herbert L. Moseley, Jr. Memorial	Primary Care
Theodore E. Woodward	Medicine

School of Medicine Endowed Funds

The Martha V. Filbert Radiation Center Fund
The Jacob E. Finesinger Memorial Fund
The Doris N. and Sylvan Freiman Perinatology Research Fund
Dr. Albert Shapiro Endowment Fund for Dermatological Research

School of Medicine Endowed Chairs and Professorships

Herbert B. Berger Chair in Medicine

Established with a Charitable Remainder Trust by Dr. and Mrs. Berger in 1978. Future income from the trust will provide supplemental support for a faculty position or positions in the Department of Medicine.

Simon and Bessie Grollman Chair of Experimental Medicine

Established by Dr. Jaye Grollman and Mrs. Evelyn Glick, the Simon and Bessie Grollman Chair of Experimental Medicine honors their parents. Future income from this fund shall support an endowed professorial chair in the School of Medicine.

Theodore E. Woodward Chair in Medicine

In funding since 1980, in honor of Dr. Woodward's retirement in August 1981. Gifts from friends, alumni and associates in trust will provide supplemental support for a faculty position in the Department of Internal Medicine.

Simon and Bessie Grollman Distinguished Professorship Endowment

The Simon and Bessie Grollman Distinguished Professorship is being made possible through a Testamentary Commitment established by Dr. Jaye Grollman to honor the memory of his parents. Future income from the trust will provide supplemental support for a faculty position in the Department of Obstetrics and Gynecology.

Dr. Aaron I. Grollman Visiting Professorship

The Dr. Aaron I. Grollman Visiting Professorship was endowed by Ellis Grollman, School of Pharmacy, Class of 1926, to honor the memory of his brother Aaron, School of Medicine, Class of 1928. Income from the trust annually brings a visiting professor with internationally recognized achievements to the basic science departments of the medical school. The visiting professor delivers the annual Dr. Aaron J. Grollman Memorial Lecture.

The Aaron I. Grollman Memorial Postdoctoral Fellowship in Surgery

In honor of the memory of Dr. Aaron I. Grollman, his sister, Evelyn Grollman Glick, has established a fund whose future income will be used to support postdoctoral research fellowships in the Department of Surgery.

School of Medicine Student Prizes

Summa, Magna and Cum Laude Awards. Certificates of honor are presented to those candidates for graduation who, during their four academic years, have exhibited outstanding qualifications for the practice of medicine.

The Dr. Wayne W. Babcock Prize. Each year a prize is awarded to a graduating senior for outstanding work in surgery. The prize is a memorial to Dr. Babcock.

The Balder Scholarship Award. This prize is awarded yearly for outstanding academic achievement by a graduating senior.

The Dr. J. Edmund Bradley Prize. Each year a graduating senior who has achieved special excellence in pediatrics is awarded a prize in honor of Dr. Bradley.

The Dr. Eugene B. Brody Award. A graduating senior is awarded a check and a certificate for outstanding achievement in psychotherapy.

The Louis, Ida and Samuel Cohen Award. A scholarship is awarded annually to a member of the senior class and house staff for recognition of superior scholarship, scientific knowledge in internal medicine, and human understanding and compassion for patients.

The Dr. Francis Donaldson Prize for Excellence in Pathology. A check and a certificate are awarded to a graduating senior who excelled in sophomore pathology.

Faculty Gold Medal. Each year a medal is struck and presented to the graduating senior who exemplifies outstanding qualities of a physician, i.e., scholarship, compassion and problem-solving skills, and shows interest in serving the University of Maryland School of Medicine.

The Family Medicine Award. A plaque, check and certificate are awarded to a senior for excellence in training in the concept of family medicine.

The Dr. Jacob E. Finesinger Prize. A prize is given each year in honor of Dr. Finesinger, late professor and chairman of the Department of Psychiatry. A member of the senior class, selected by the faculty, is awarded this prize for outstanding work in psychiatry.

The Dr. A. Bradley Gaither Memorial Prize. This prize is given each year by Mrs. Gaither as a memorial to her husband. It is awarded to the student in the senior class excelling in genito-urinary surgery.

The Dr. William Alexander Hammond Award. A prize is awarded to the graduating senior who has performed with special excellence in neurology.

The Dr. Leonard M. Hummel Memorial Award. A gold medal and Certificate of Proficiency are awarded annually as a memorial to the late Dr. Hummel. The award is presented to the graduate, selected by the faculty, who has exhibited outstanding qualifications in internal medicine.

Dr. Earl I. Pass Award for Exceptional Proficiency in Internal Medicine. A graduating medical student who has demonstrated exceptional proficiency in the field of internal medicine is awarded a prize.

The Dr. Milton S. Sacks Memorial Award. A graduating senior who has performed with special excellence in medicine and hematology is awarded this prize in honor of Dr. Sacks, late professor of medicine and hematology.

The Uhlenhuth Prize in Anatomy. Each year a graduating senior is awarded a certificate and skull for outstanding work in anatomy during the freshman year.

The Robley Dunglison Prize for Excellence in Preventive Medicine. Each year a graduating senior, who has performed with special excellence in Epidemiology and Preventive Medicine, is awarded a check and an engraved plaque.

The Rudolf Virchow Prize. This award, consisting of a check and a certificate, is given to a graduating senior for outstanding research work in Pathology.

The Dr. Hans R. Wilhelmsen Award in Surgery. A graduating senior is awarded a prize for academic achievement in surgery.

The School

"Be It Enacted . . . That a College . . . by the name of the College of Medicine of Maryland, be established . . . upon the following fundamental principles . . . The said College shall be founded and maintained forever upon a most liberal plan, for the benefit of students of every country and every religious denomination, who shall be freely admitted to equal privileges and advantages of education, and to all the honors of the College, according to their merit, without requiring or enforcing any religious or civil tests."

Founding Act, 1807
General Assembly of the State of Maryland

The University of Maryland School of Medicine was the fifth medical school founded in the United States. It was racially integrated almost from its inception, and women were first admitted in 1921. The school's missions parallel the principles upon which it was founded. They are to provide education in the health and biomedical sciences, to acquire and disseminate new scientific knowledge pertinent to health care and to furnish leadership in health planning and policy matters for the state of Maryland.

The strength of this school resides in its six basic and 14 clinical science departments. The faculty of these departments are dedicated educators, researchers and health care providers. All work together to provide an excellent educational environment for the training of physicians and biomedical scientists.

Several programs are offered in the biomedical sciences. There is the traditional MD program as well as combined degree programs leading to the MD/PhD or MD/MS. Graduate programs are offered at the masters and doctoral levels in the basic sciences. There are baccalaureate programs in medical technology and physical therapy as well as a number of interdisciplinary programs with both service and research components. Continuing education programs are sponsored for practicing physicians.

The School of Medicine offers students an excellent spectrum of resources and field experiences. Located along the Baltimore-Washington corridor, the school is in the midst of a great concentration of health care institutions, research centers, government agencies and professional associations. The University of Maryland Medical System is the school's primary training site for both medical students and residents. In addition, students and residents are also trained through the network of Baltimore metropolitan hospitals which are affiliated with the School of Medicine.

History

Dr. John Beale Davidge, one of the founders, was appointed as the first dean of the new school in 1807. Under his farsighted leadership, a new concept of medical education was formed: "The science of medicine could not be successfully taught under the usual organization of medical schools; that without the aids of physiology and pathology, either associated with anatomy or as a separate chair of institutes, the philosophy of the body in sickness or in health could not be understood."

At the end of 1807, a medical school existed in Baltimore with officers and faculty, but without buildings or funds. Dr. Davidge and his small faculty continued to teach in their own homes, as they had been doing prior to the official Founding Act. From the beginning, strong emphasis was placed on "bedside" teaching, with the first class of seven students receiving clinical instruction at the Baltimore Almshouse, a workhouse and infirmary for the poor. This emphasis has continued over the years, and the concept of direct patient contact remains important today.

A lottery was authorized to finance building, but it was largely due to the enthusiasm and dedication of early faculty members and interested Baltimore citizens that the College of Medicine was able to establish a campus. Land was purchased from Col. John Eager Howard, Revolutionary War hero and former governor, for the sum of $10,000 of which Col. Howard donated $1,000. The lot, at what is now Lombard and Greene Streets, was then on the outskirts of town affording a clear view of the Patapsco River. Its remote site was considered an advantage since the public was violently opposed to dissection of the human body, as Dr. Davidge was well aware, having had his own small anatomic theater destroyed several years previously by an angry mob.

The first building, now known as Davidge Hall, was constructed on the lot in 1812, and is the oldest building in the United States used continuously for medical education. Its architect, Robert Carey Long, Sr., used the Pantheon in Rome as his model for the building. In spite of remodeling throughout the years, some of the dissecting "cubbyholes" still remain, along with secret stairways and hidden exits which afforded both students and professors safe passage from angry mobs. Davidge Hall has been fully restored to its original state and is being maintained as a medical museum.

In 1823, the Baltimore Infirmary, the forerunner of the University of Maryland Hospital, was built across from Davidge Hall. This building was still in active use until 1973, when all the clinics located there were moved into the new addition of the University of Maryland Hospital.

Mergers with the Baltimore Medical College in 1913 and the College of Physicians and Surgeons in 1915 provided the University of Maryland School of Medicine with greatly expanded faculty and clinical facilities. In 1920, the state university was established when the professional schools in Baltimore merged with the Maryland State College of Agriculture in College Park and the state assumed financial obligation for all the schools.

Milestones

Through the years, there have been many firsts at the School of Medicine. One of the early faculty members, Dr. John Crawford, who had been the first to vaccinate Baltimoreans against smallpox in 1800, presented evidence as early as 1810 that tuberculosis was contagious. His personal library became the nucleus of the medical school library, one of the oldest in the country.

In 1839, the Baltimore College of Dental Surgery was incorporated, the first such school to be established in the world. The techniques of auscultation and percussion were taught at the School of Medicine for the first time in America as early as 1841; and in 1844, Dr. David Stewart, the first professor of pharmacy in the United States, initiated his lectures at Maryland.

From the beginning, the study of human anatomy was recognized as basic in medical education, but the public outcry and the diffi-

culty in obtaining bodies limited dissection. Still, in 1848, Maryland became the first medical school to make anatomical dissection a required course. Six years later, compulsory courses in experimental physiology and microscopy were introduced.

A milestone in cancer research occurred in 1853, when Dr. Francis Donaldson became the first person in America to advocate biopsy and microscopic diagnosis of malignancy. Maryland was the first to establish chairs in the diseases of women and children (1867), and diseases of the eye and ear (1873).

The Campus

Today, the School of Medicine is part of a professional schools campus located on 36 acres in downtown Baltimore. This campus—comprising the Schools of Dentistry, Law, Medicine, Nursing, Pharmacy, and Social Work and Community Planning, in addition to the Graduate School and the University of Maryland Medical System—offers the medical student a unique opportunity to participate in the growing number of interdisciplinary educational programs carried out among the professional schools.

The university offers extensive campus resources including the Health Sciences Library, which serves as the Regional Medical Library for ten states and the District of Columbia, and an information processing system.

The UMAB campus is in the midst of a physical expansion program. The Law School recently opened its new library. The new School of Pharmacy building was occupied in July 1982 and the new School of Social Work and Community Planning building opened in early 1983.

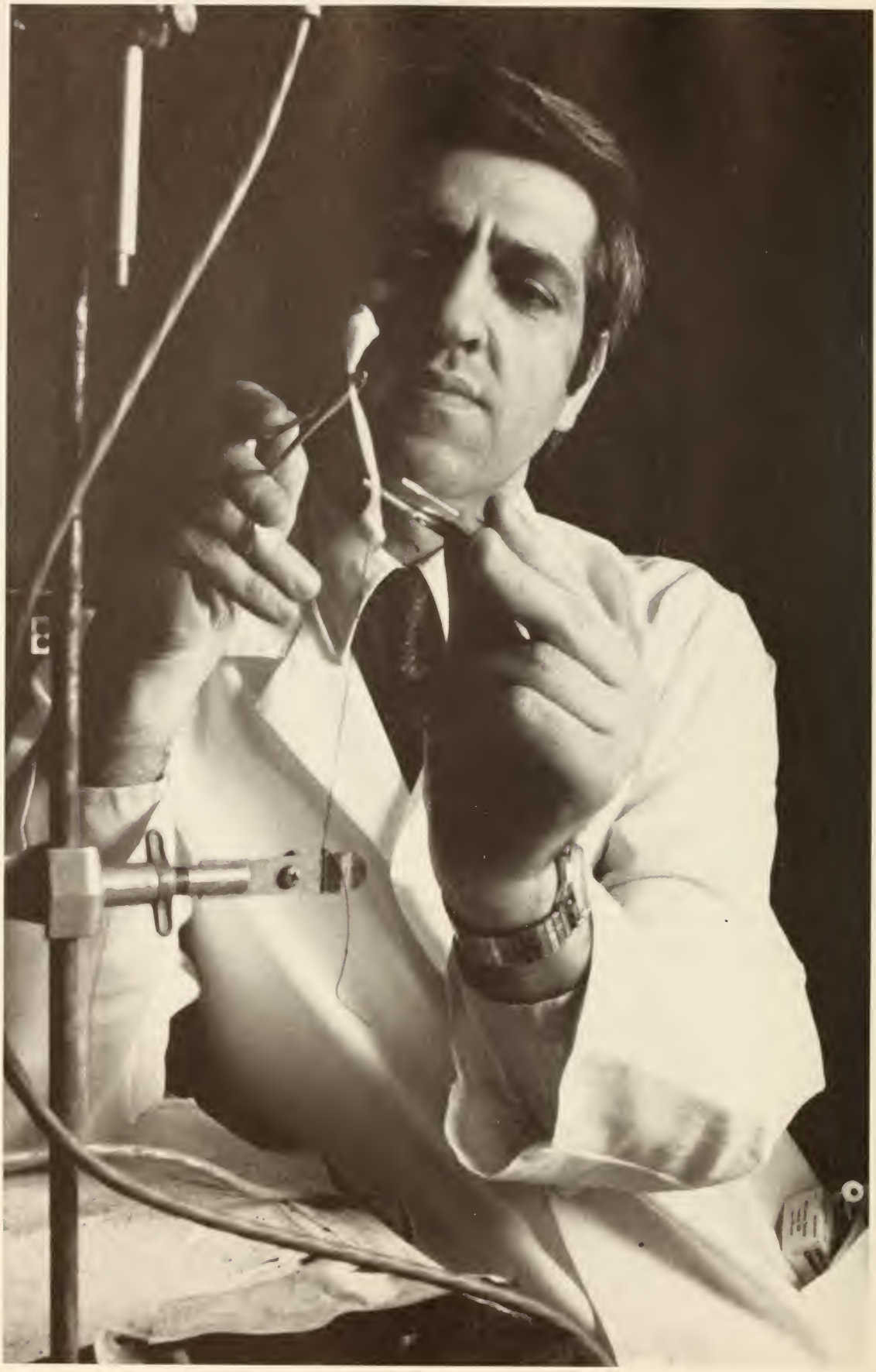
The City

Baltimore is the largest city in Maryland, the ninth most populous in the nation and the site of the country's fourth largest foreign-commerce seaport. The Baltimore region has much to offer from the sophistication and culture of a large metropolitan city to the beauty and leisure of the waterfront and rural areas that surround it. Less than an hour's drive away is Washington, D.C., with its many attractions.

Having been an important city in our nation's history, Baltimore maintains a strong feeling for the past, typified by the many charming neighborhoods of restored houses and an abundance of historic buildings. In the last decade the downtown area has undergone a dramatic revitalization. Several blocks from campus is the nationally acclaimed Inner Harbor area, where Harborplace, a complex of businesses, shops and restaurants, shares the harbor with sloops, renovated federal-style townhouses and the architecturally striking National Aquarium. The new Baltimore Metro, the first leg of an anticipated citywide subway system, connects the downtown area to the outskirts of the city.

Baltimore's cultural offerings will please the most discriminating tastes. An excellent symphony orchestra performs in a spectacular new symphony hall, opened in 1982 as the centerpiece of the Arts District. The district also features a renovated Lyric Opera House and the Maryland Institute College of Art. The city boasts many fine museums, libraries and professional theater groups.

For the sports fan, Baltimore boasts the pennant-winning Orioles as well as excellent lacrosse, indoor soccer, ice hockey and horse-racing. Nearby the Chesapeake Bay awaits, offering unparalleled water sports and the seafood for which the region is famous.



Medical Alumni Association

"The alumni of the School of Medicine of the University of Maryland desiring to further the interest and advancement of the University of Maryland School of Medicine and perpetuate the associations made during the medical school period. . ."

With that preamble to its constitution, the Medical Alumni Association has, since 1895, served all graduates, students, faculty, staff and physicians affiliated with the School of Medicine.

The Medical Alumni Association office, located in Davidge Hall at 522 West Lombard Street, is open from 8:30 a.m. to 4:30 p.m. and is staffed with full-time employees who are available to serve you during regular business hours. Originally the primary functions of the association were the maintenance of up-to-date addresses of all graduates, contact with the membership through regular mailings and coordination of Alumni Day activities, which are held in conjunction with graduation when five-year reunions are celebrated. Through the years the association has also supervised the printing and distribution of the quarterly publication, the *BULLETIN*, which is mailed to all alumni, faculty and students.

An equally important function initiated seven years ago is the Annual Giving Drive for the School of Medicine. Since that time, alumni donations totaling $1,500,000 have been generated through an annual Phonathon. In November 1983, 104 alumni volunteers raised $266,000 in an eight-night fund-raising effort which resulted in total donations of $455,500. This innovative annual giving approach was the first within the university, and its success has inspired other schools to adopt this method of fund raising.

Since 1969, an additional $1,000,000 was raised by the Medical Alumni Association for the restoration of Davidge Hall. This building, located on the corner of Lombard and Greene Streets, was the first of the medical school's buildings. Built in 1812, it has been designated as a "National Historic Place" by the Department of the Interior. Donations from alumni and friends have enabled Davidge Hall to be converted into a "living museum"—one which symbolizes the beginnings and continuity of higher education in the state of Maryland. Completion of the restoration was celebrated in 1982. By the fall of 1984, the corridors surrounding the upper lecture room, Anatomical Hall, will house customized display cases containing a valuable collection of antique instruments and other memorabilia representing the pioneers of medicine at the University of Maryland.

While the association has been responsible for the direction of the Annual Giving Program, it has also been instrumental in securing a number of lectureship funds, student loan funds and a large student-aid grant, as well as in providing project assistance in departments which might not have been funded. The Medical Alumni Association established a no-interest student loan fund in 1958 and through strong alumni support during the past several years, over $100,000 is on loan to deserving medical students in need of financial aid.

In an attempt to promote a better line of communication among students, faculty and the association, each medical school class is entertained individually. Davidge Hall has been the site for the freshman pizza party, and the beef and beer bash for the sophomores. The third-year students are entertained at an oyster roast, and upon graduation, seniors are invited as guests to the Annual Alumni Banquet.

The Medical Alumni Association is totally self-supporting and all expenses incurred in its operation, including alumni and student activities and publication of the *BULLETIN*, are

derived from the dues of fifty percent of the membership. All faculty and staff members affiliated with the School of Medicine and the University of Maryland Medical System are welcome and eligible for membership.

The staff of the Medical Alumni Association are independent employees and report to the Executive Committee of the Board of Directors, while responding to the needs of the dean of the School of Medicine. The primary and most important function is to offer service to alumni, students and faculty.

The University of Maryland Medical System

The University of Maryland Medical System is a private nonprofit institution comprised of the University of Maryland Hospital, the University of Maryland Cancer Center, and the Shock Trauma Center. Established in July 1984, it was previously an agency of the state of Maryland. The medical system provides the primary clinical setting for the University of Maryland School of Medicine. It is dedicated to providing quality health care for the people of Maryland, to preparing men and women for the practice of medicine and the allied health professions, and to carrying out research to improve the quality of health care.

While the science of medicine can be taught in the classroom, the art of medicine must be learned where it is actually practiced. In the United States, the tradition of physicians training their successors in a hospital setting was born at the University of Maryland. For more than a century and a half, patients have benefited from the additional care and attention provided by the men and women receiving their clinical training here.

Since its founding in 1823, the hospital has become a major tertiary care referral center which offers the full range of specialized medical and surgical services. In recent years, as the number of health care facilities in urban centers has decreased, the medical system has assumed increasing responsibility for its surrounding community. As a result, more than 100,000 city residents look to the University of Maryland Medical System for their primary source of health care.

The 785-bed hospital is one of the nation's busiest. In one year, it records approximately 20,000 in-patient admissions, 250,000 out-patient visits, and 40,000 emergency room visits. Two thousand babies are born here each year. Every day, nearly 5,000 people pass through the hospital's doors. The senior medical staff—more than 600 physicians—is comprised of the clinical faculty of the School of Medicine. They supervise the training of the graduate physician house staff as well as the medical students.

Because of its unique professional and academic environment, many outstanding treatment programs and research facilities have been attracted to the medical system. The Shock Trauma Center of the Maryland Institute for Emergency Medical Services Systems is located here as is the University of Maryland Cancer Center, the internationally renowned center for developing new cancer treatment modalities. In addition, Maryland's Center for Vaccine Development, the Institute of Psychiatry and Human Behavior, and the Sudden Infant Death Syndrome (SIDS) Institute (one of the nation's largest reseach programs of its kind) are located at the university.

A heliport adjacent to the hospital permits rapid transportation of the most severely injured and acutely ill citizens from around the state. In addition, critically ill newborn babies from throughout Maryland are flown to the hospital's outstanding neonatal intensive care nursery. The institution's facilities also include intensive care units serving seven medical specialties and an extensive rehabilitation medicine program.

A major orthopaedic center offers unique reconstructive surgical techniques to patients

referred from throughout the nation. The hospital recently installed new cardiovascular laboratories for children and adults which support the state's comprehensive cardiology program. The Stroke Data Bank, part of the medical system's Stroke Center, is one of five in the United States. The institution's neurosurgery division has attracted national attention for its innovative techniques in the treatment of brain tumors. Furthermore, the high risk pregnancy program is the only one of its kind in Maryland.

The medical system's commitment to providing alternatives to specialized medical care is demonstrated by the presence of an ambulatory care facility which incorporates family practice, general adult medicine and several specialty services. This modern structure opening in 1984 will be known as University Health Center. It is located one block from the medical system building. Ambulatory care is also provided in the hospital by separate emergency units for both children and adults.

The University of Maryland Medical System has grown both professionally and physically during the years. The move from century-old buildings to modern facilities brought active cooperation with many of the university's professional schools. Today, the hospital is the training site for a broad spectrum of health professionals including pharmacists, social workers, dentists, nurse practitioners and various health-related professionals and technicians. This interprofessional environment is a unique and valued characteristic of the University of Maryland Medical System.

Like all academic health centers, the decade of the 80's will require the medical system to keep pace with continued rapid technological development within the confines of a constrained national economy. This emphasis will be balanced by greater concern over resources and their control, and greater pressures to operate efficiently and effectively. The University of Maryland Medical System will continue renovating, rebuilding and renewing its facilities and systems to perpetuate a fine record of achievement in patient care, research and education.

Affiliations

The clinical facilities used in the teaching programs of the School of Medicine are numerous and varied. They offer a broad spectrum of opportunities ranging from basic health care to complex medical problems requiring expensive, highly specialized facilities and staff.

Crucial to medical care today are the community hospitals in which the majority of primary and secondary level health care problems are seen. Recognizing these facts, the

medical school has developed a network of institution-to-institution affiliations with community hospitals at three educational levels: undergraduate, graduate and postgraduate.

A closely knit undergraduate affiliation exists with several community hospitals serving a wide range of patients in varied geographic settings. Among these are Maryland General, Mercy, South Baltimore General, and York (Pa.) Hospitals. Each has made a major commitment towards being a health education center, firmly believing that the end result of a teaching environment is better patient care. Central to this are programs devoted to the continuing education of all staff. In addition, all have well-developed graduate education programs which attract interns and residents who wish to train in a community hospital atmosphere. These hospitals have recruited full-time educators in most departments, who hold academic appointments as full-time faculty members and participate in activities of the medical school.

Closely linked with the School of Medicine are the Baltimore and Ft. Howard Veterans Administration Medical Centers. Within several years the Baltimore Veterans Administration Medical Center will be completely integrated with the medical school and located on this campus. Currently, it is supervised by a dean's committee and the departments of medicine, neurology, psychiatry and pathology provide faculty and house staff coverage.

Still other facilities are needed to complete the educational opportunities for physician training. Special programs involving one or more departments are conducted at Montebello Rehabilitation Center, a state rehabilitation facility; the John L. Deaton Medical Center, an extended care and rehabilitation facility; James L. Kernan Hospital, for children and adults with specialized orthopaedic problems; the Sheppard-Pratt Hospital, a private psychiatric hospital; and Springfield, Spring Grove and Rosewood, state mental health hospitals.

International Health Program

In accordance with objectives of the International Health Research Act of 1960, International Centers for Medical Research were created under the auspices of the National Institutes of Health to advance the status of international health. Congress further expressed the hope that a program would be established through United States universities for the early development of research and research training centers with adequate field opportunities for international studies.

Thus the Office of International Research of the National Institutes of Health provided for the establishment of such a center at the University of Maryland School of Medicine in March 1961, to conduct scientific programs both in Baltimore and abroad in Lahore, Pakistan.

While the federal program sponsoring these centers ceased in 1980, the University of Maryland has continued its activities, both in Lahore and Baltimore, under the auspices of NIH and USAID project grants.

The program has these objectives:

> To conduct medical and biomedical research at the domestic and overseas sites.
>
> To provide research opportunities in international health problems for American physicians and allied professional workers, and their counterparts in Pakistan.
>
> To create, through scientific endeavors, an atmosphere of mutual understanding and friendship between Pakistan and the United States.

This program provides opportunities for postdoctoral research in the fields of infectious disease—microbiology, medical entomology, epidemiology and parasitology. Current projects include mosquito biology, ecology and genetics, malariology and arbovirology. Often overlapping interests result in joint research projects. At present, projects involve collaboration with the following organizations or institutions: the U.S. Agency for International Development, the University of Illinois, King Edward Medical College (Pakistan), the Pakistan Medical Re-

search Council, the World Health Organization, and the Imperial College of Science and Technology (England).

Appointments to the program are made at the research associate level. Upon acceptance into the program each research associate, with the aid of an advisor, devises a plan of research. Assignment to divisions and appointment of advisors depend upon the candidate's background and interests and the program's personnel needs. Following a basic orientation course, each research associate begins or joins an overseas research project, which frequently involves both field and laboratory work. Appointments are for one to three years.

Further inquiries should be addressed to the International Health Program, 8-34F, Medical School Teaching Facility, 10 South Pine Street, Baltimore, Maryland 21201.

Area Health Education Center Program

One of the University of Maryland at Baltimore's commitments toward improving health care and delivery programs in primary care is the Area Health Education Center (AHEC) program.

The AHEC program has been developed to provide a comprehensive health care education program for undergraduate and graduate medical students, as well as for students from the other UMAB professional schools. The university received formal legislative support for the AHEC program in 1976, when the Maryland State Legislature passed a bill which established a formal mechanism for the university to create AHECs, described as "multiple health education and training centers (which) will attract students, interns and residents to the several geographic areas, thereby attracting increased numbers of practicing physicians, encouraging development of health care facilities, providing for the training of additional numbers of allied health care professionals and increasing capabilities for the existing program of graduate and continuing medical education and health training." The organization thus formed was the Maryland Statewide Medical Education and Training System.

Presently, two AHECs are operational in the state: a rural and a geriatric. The first AHEC was established in Cumberland, a rural community in Western Maryland. This center affords students the opportunity to understand the valuable and rewarding benefits of delivering primary health care in a rural environment. The geriatric AHEC is located in Baltimore City and is geared to serve the city and the state's aged population.

As a matter of school policy, it is expected that 10 percent of all clinical education will be taken by students in an AHEC site. Senior medical students may choose a rotation in any one of these centers as an elective in primary care. All internal medicine and pediatric house staff in the primary care programs will serve a rotation in an AHEC location. It is hoped that the students' career choices will be influenced positively toward practice in such settings and, in the majority of instances, toward primary health care.

Office of Medical Education

The Office of Medical Education serves as a consultative unit to all departments of the medical school in the following areas:

Instructional design, implementation and evaluation.

Media systems design and hardware installation, e.g., operating room TV.

Faculty development regarding instructional techniques, design, evaluation and technology.

Educational resources including audiovisual aids, instructional television and computer-assisted instruction.

Development and implementation of computer-based instructional systems.

Assistance in development of special educational programs.

Assistance in curriculum development and evaluation of curricular programs.

Evaluation of instructional systems and techniques.

Coordination of library facilities to include the storage and retrieval of all nonprinted educational material and software; operation and maintenance of learning resources centers and media libraries; establishment of an interlibrary loan system statewide.

Maintenance, distribution and operation of projection and related audiovisual equipment for use in teaching.

Administration of the Fifth Pathway Program.

Tutorial assistance and study skills.

Classroom scheduling.

Research in medical education, instructional design, evaluative techniques and educational technology.

Production and distribution of videotaped programs for local, regional and national use.

Consultation with the faculty and staff of the medical as well as the other UMAB schools in all areas of media production.

Illustrative Services

The Department of Illustrative Services is a functioning component of the Office of Medical Education. The department supplies audiovisual aids to medical school faculty and staff for teaching, research and publication purposes. The primary services are illustration and photography.

Illustration. Services include comprehensive renderings of surgical and clinical techniques, anatomical renderings, statistical charts and other graphic representation. This section also handles simple and comprehensive design and finishing of flyers, brochures, programs and posters; and layout and paste-up for offset printing and photographic copying. In addition, they design displays and exhibits.

Photography. The division handles photographic copying of flat material such as written matter, x-rays, laboratory tracings and data; photography of specimens, equipment set-ups, surgical, clinical and laboratory activities; and portraiture for school-related purposes. The division also does slide duplication and motion picture photography and acts as a collection station for commercial processing of color photography.

Learning Resources Center and Clinical Media Library

The Learning Resources Center is a basic sciences media library providing students with access to many self-instructional materials including video-tapes, slide-tapes, computer-assisted instruction, lecture tapes and reference books. A Clinical Media Library, located in the Frank C. Bressler Research Building houses materials similar to that of the Learning Resources Center, but with a clinical orientation.

Health Sciences Library

The Schools of Medicine, Dentistry, Pharmacy, Nursing, and Social Work and Community Planning, as well as the Graduate School and the University of Maryland Medical System are served by the Health Sciences Library. It is one of the oldest medical college libraries in the country, dating back to 1813 when the University of Maryland purchased Dr. John Crawford's personal collection to form a medical library.

The library currently serves as the Regional Medical Library for region II, an area covering 10 Southeastern and Atlantic states and the District of Columbia. It contains more than 240,000 bound volumes, with 3,100 current periodical subscriptions. The collection size ranks the library among the 15 largest health sciences libraries in the United States. Its collection is more varied than those of most other medical libraries, with the subject scope encompassing the basic biomedical and health-related sciences as well as the social and behavioral sciences. Thus, in providing literature to support the teaching, research and health care programs on the campus, the library makes available a wide range of materials to the medical community.

The Health Sciences Library has installed one of the most advanced automated library systems available in the country. Circulation services are completely automated as well as the catalog which provides access to library holdings. The Online Catalog offers more searching options than the card catalog and can be accessed via library terminals, on-campus terminals linked through the campus computer center, and personal terminals or microcomputers with dial-up capabilities.

The library also provides access to a wide range of automated databases of the journal literature through its Computerized Reference and Bibliographic Services (CRABS). Customized subject bibliographies from approximately 200 databases in the sciences and the social sciences including MEDLINE, Psychological Abstracts, ERIC, TOXLINE and Social Sci-search are available as well during evening and weekend hours for those who prefer to perform their own literature searches.

The Health Sciences Library has established an innovative outreach service program which adds a new dimension to library service on campus. Each of six information specialist librarians is assigned to one of the professional schools or the hospital. The information specialists participate in collection evaluation and development in the respective subject areas related to their assigned professional school, teach seminars and orientations in information retrieval, and serve as information consultants. The reference services staff also provides traditional reference service.

Interlibrary loan service is available for needed materials not held in the library collection.

Self-service photocopy machines are available on all floors of the library. The library is open 8:00 a.m. – 10:00 p.m. (Monday – Friday), 9:00 a.m. – 5:00 p.m. (Saturday) and 12:00 noon – 8:00 p.m. (Sunday). Special holiday and summer hours are posted.

Computer Center

Computers located on both the UMAB and College Park campuses are available to enrolled students on the UMAB campus through the facilities of the Instructional and Research Computing Unit (IRCU). The system has capabilities to use BASIC, FORTRAN, Pascal and PL-1 languages; and to program statistical analysis packages SPSS, SAS and DMDP. To gain access to this unit, a student must open an account with the computer center. Credit and noncredit courses on programming and computer applications are offered to help students use the center to full advantage.

Office of Student Affairs

The Office of Student Affairs is designed to provide students enrolled in medicine with guidance, advice, help and administrative services. In addition, the office is responsible for monitoring student progress and advancement, registration, graduation and all aspects of student life related to undergraduate medical school. To this end, the office employs one full-time associate dean and one full-time assistant dean, three part-time assistant deans, two coordinators and a clerical staff.

While the entire staff is available to help all students in any area, some members also assume a specialty area within their overall functions. These specialty areas include minority affairs, senior elective year advising, student fellowships, national residency programs advising, counseling and administration of the students' Vertical Advisory System.

Elective Program. The Office of Student Affairs compiles course offerings, schedules courses and changes of electives, and provides for both evaluation of a student's performance during electives and evaluation of the electives taken.

Office of Minority Affairs. The office coordinates all activities concerned with the recruitment and retention of minority medical students. Some specific goals are to increase the number of minority students entering medical school and to provide all reasonable assistance necessary to facilitate their positive progress through the School of Medicine. To this end, workshops, academic and personal counseling, group and individual tutorial services, and assistance in securing financial aid and summer employment are offered. In addition, the program staff coordinates a prematriculation summer program to enable minority students to enhance their undergraduate preparation for medical school prior to year I.

Residency Advisory System. The residency advisory system provides assistance in specialty career planning and guidance in the selection of suitable residency training programs. This service is available on an individual basis to all members of the junior and senior class.

Vertical Advisory System. Students have the opportunity for close personal association with a team of faculty advisors and upperclass students during each of the four years of medical school. This advisory system, administered through the Office of Student Affairs, provides a helpful, ongoing interchange concerning academic, social, personal and career problems and opportunities.

Financial Assistance. Information regarding the types of aid available to medical students is detailed in the financial information section.

Human Dimensions in Medical Education (HDME) Program

The HDME program provides opportunities for informal activities involving students and faculty outside the classroom setting. These range from social gatherings to serious small group discussions of concerns and feelings related to the personal and professional aspects of medical education and practice.

Students may elect to participate in the HDME Program at any point in their medical school career. Many enter the program by attending the prefreshman orientation retreat held in late August. The retreat is attended by students from all levels of training, faculty members and, in many cases, spouses or close friends. Participants are thus provided an opportunity to get acquainted in an informal, intimate, off-campus setting. Much of the time at the retreat is spent in intensive small group sessions. Topics of discussion are determined in each group, but typically cover such areas as adjustment to medical school, the impact of a medical career on domestic life, and the problem of setting priorities among various professional and personal commitments. Recreational activities are also included in the four-day experience.

Students in the HDME Program also participate in the Vertical Advisory System (see Office of Student Affairs), but are normally assigned faculty advisors within the HDME program.

HDME was conceived at the Center for the Studies of the Person in La Jolla, California. The program is planned and operated locally by student-faculty committees. One goal of the program is to provide an environment in which students and faculty advisors can develop a meaningful relationship during the four years of medical school. Another desired end result is the development of effective communication and listening skills which will enable the medical student, house officer and faculty member to become better health care providers.

Student Government

Committee on Student Activities. At present, a standing committee of the School of Medicine Council charged with the continued study of the health and general welfare of the students has been replaced by regular meetings involving the deans, class officers, Student Council president and student members of the Curriculum Committee.

Judicial Board. The medical school community operates under a general statement of ethical principles which are subject to periodic review by a judicial board. This board is chaired by a faculty member, appointed by the dean and is composed of elected representatives from the faculty, the student body and the house staff. The board investigates any alleged infractions of the ethical code and conducts appropriate hearings. The board's findings and recommendations are then forwarded to the dean for final disposition.

Student Council. This organization is recognized by the administration of the School of Medicine as the official representative body of medical, medical technology and physical therapy students. All students of these professions become de jure members of the student body at registration upon payment of the student activities fee. The Student Council members are elected by the classes of the student body with one representative per 50 members (or fraction thereof), the first representative being the duly-elected president of the class.

Duties of the Student Council are as follows: 1) to disburse monies from the student activities fund according to the council's financial disbursement guidelines, 2) to organize and administer the intramural athletic program, and 3) to define areas of schoolwide interest and to coordinate support for related activities through policy guidance, funding and promotion.

Each year the Student Council sponsors an intramural program for medical, medical technology and physical therapy students. The events usually consist of interclass competition in touch football, basketball, softball and tennis. A ping-pong tournament and coed volley ball games are also regular events.

Student Publication

Terrae Mariae Medicus. The yearbook is published annually at the discretion of the medical school's senior class. Since 1896 the volume has provided a wide coverage of student life. Each senior receives a yearbook, the cost of which is included in the student activities fee.

Student Organizations

American Medical Student Association (AMSA). The AMSA chapter at the University of Maryland School of Medicine is chartered as a member body of the national AMSA, an organization begun in 1951 to channel student activism into improving the delivery of health care in the United States. As such, its concerns encompass the entire spectrum of health issues, from manpower recruitment, education and utilization, to legislation and planning of innovative methods of raising the level of health care in the country. Membership is open to all medical, allied health professions and pre-med students on an affiliate basis. Nationally, AMSA offers students the opportunity to design, administer and participate in programs and projects which increase the student's awareness of the multiplicity of factors that determine levels of health. Locally, AMSA sponsors freshman orientation for the medical school, fosters social interaction among medical students and sends delegates to regional conferences and national conventions. Each year AMSA, in conjunction with the senior class, selects the teaching faculty member to receive the Golden Apple Award in recognition of teaching excellence.

Student National Medical Association (SNMA). The University of Maryland SNMA chapter was organized in 1970 by the minority students in the medical school. The organization's general goals focus upon alleviating the crisis of health care delivery in minority groups of the American population by increasing enrollment and decreasing the attrition rate of minority students in medical schools. A very specific goal of the national organization is a program directed at the problem of sickle cell anemia. On campus, the local chapter gives a voice to problems facing minority students in medicine in general, and at this medical school in particular. The group also provides pertinent activities and functions for the well-being of its members.

Family Practice Club. In 1969, a group of medical students formed this organization to increase the awareness of the new specialty of family practice and to provide activities related to it. Through the club's summer preceptorship program and its monthly meetings, students interact socially with practicing family physicians in the discussion of topics of current interest in family medicine. The Maryland Academy of Family Physicians and the medical school's Department of Family Medicine are both very active in their support of the club's activities.

Alpha Omega Alpha. The Beta chapter of Maryland was established at the University of Maryland in 1949. Medical students possessing outstanding qualities of moral integrity, scholarship and leadership are elected to membership in their third or fourth years. The society sponsors an annual lectureship, a forum for the presentation of medical student research and chapter meetings on topics of social, educational and philosophical interest to medical students and faculty.

American Medical Women's Association (AMWA). The University of Maryland American Medical Women's Association, organized in

1979, is a chartered junior branch of AMWA. AMWA is a national association organized to promote the interests of women physicians and to provide for a sharing of mutual interests and friendships. Maryland has an active regional state branch, composed of women physicians practicing in this state. It serves as the direct sponsor of the junior branch.

The objectives of AMWA's junior branch include: bringing women in medicine into association with each other for their own mutual advantage; encouraging social and cooperative relations within and external to the profession; aiding women medical students; encouraging and supporting premedical women in pursuit of a medical career; promoting an interest that medical education be responsive to the needs of women; and bringing medical students into association with the AMWA.

Campus Health Services

The School of Medicine provides medical care for its students through the Campus Health Services located in Room 145, Howard Hall. The office is staffed by a physician-director, two internists, two psychiatrists, a psychologist, a gynecologist, three nurse practitioners, two registered nurses and five secretaries. Care is provided in an office practice setting for those students with illnesses or injuries not requiring hospitalization, and which may or may not prevent the student from attending classes. Hospitalization may be provided by the Campus Health Services physicians (all specialty certified) or by referral as the student requests. All forms of counseling are available, at no charge, by calling Campus Health Services. All care is completely confidential and secure to the individual.

All students are required to have Blue Cross hospitalization insurance or its equivalent and must produce proof of such membership at the time of registration. A special student policy is available to all students enrolled in the medical school. Detailed information regarding its provisions may be obtained from Campus Health Services.

As a prerequisite for registration each student is required to have a physical examination, tuberculin skin test and chest x-ray as scheduled by Campus Health Services. The physical examination may be done by a personal physician at student cost, and returned to Campus Health Services. Campus Health Services forms must be used. Examination will include eye and ear testing. Abnormalities found during the examination are discussed with the student. All students will complete the physical examination before final acceptance can be granted.

In order to avoid absences during the academic year, prospective students are advised to have any known health problems under control and listed in their medical history before entering the School of Medicine. Adherence to preventive medicine programs conducted by the health service (i.e., a tuberculin skin test and chest x-ray) is required of all students, and is a mandatory part of registration. Since medical school is the entry point into a lifetime as a health professional, students are also strongly urged to undertake a three-dose course of immunization against Hepatitis B. Hepatitis is very much an occupational illness of possible serious consequence to physicians. The series is $100 at cost, but the protection is important both physically and psychologically. Immunization can be arranged through Campus Health Services.

Campus Health Services, by prior arrangement and knowledge, will treat chronic conditions contracted by students prior to admission or will extend treatment to acute conditions developed in the period between academic years.

A student's spouse or other members of the family are not eligible for health service

care without charge. If the student does not have a continuing care relationship in Baltimore, and if desired by the student and family, arrangements may be made at rates reflecting professional courtesy.

All students who register are required to pay a health fee at the time of registration. This fee covers all regular visits to Campus Health Services during the school year. Any necessary diagnostic studies will be at the expense of the student unless the studies are covered by insurance.

Night and weekend telephone advice or direct care can be arranged by calling the Campus Health Services at extension 6790. Emergency room visits, unless in extreme emergency, will not be covered by Campus Health Services, except with prior telephone approval by the medical admitting officer.

Housing

The University of Maryland at Baltimore maintains a campus housing program as part of the total educational experience. There are two different campus housing facilities available which offer a variety of living styles at different rates—Pascault Row, a new fully furnished apartment complex consisting of 81 units with space for 178 students, and the Baltimore Student Union coeducational housing facilities.

Application forms and information are available by writing the Director of Housing, 621 West Lombard Street, Baltimore, Maryland 21201.

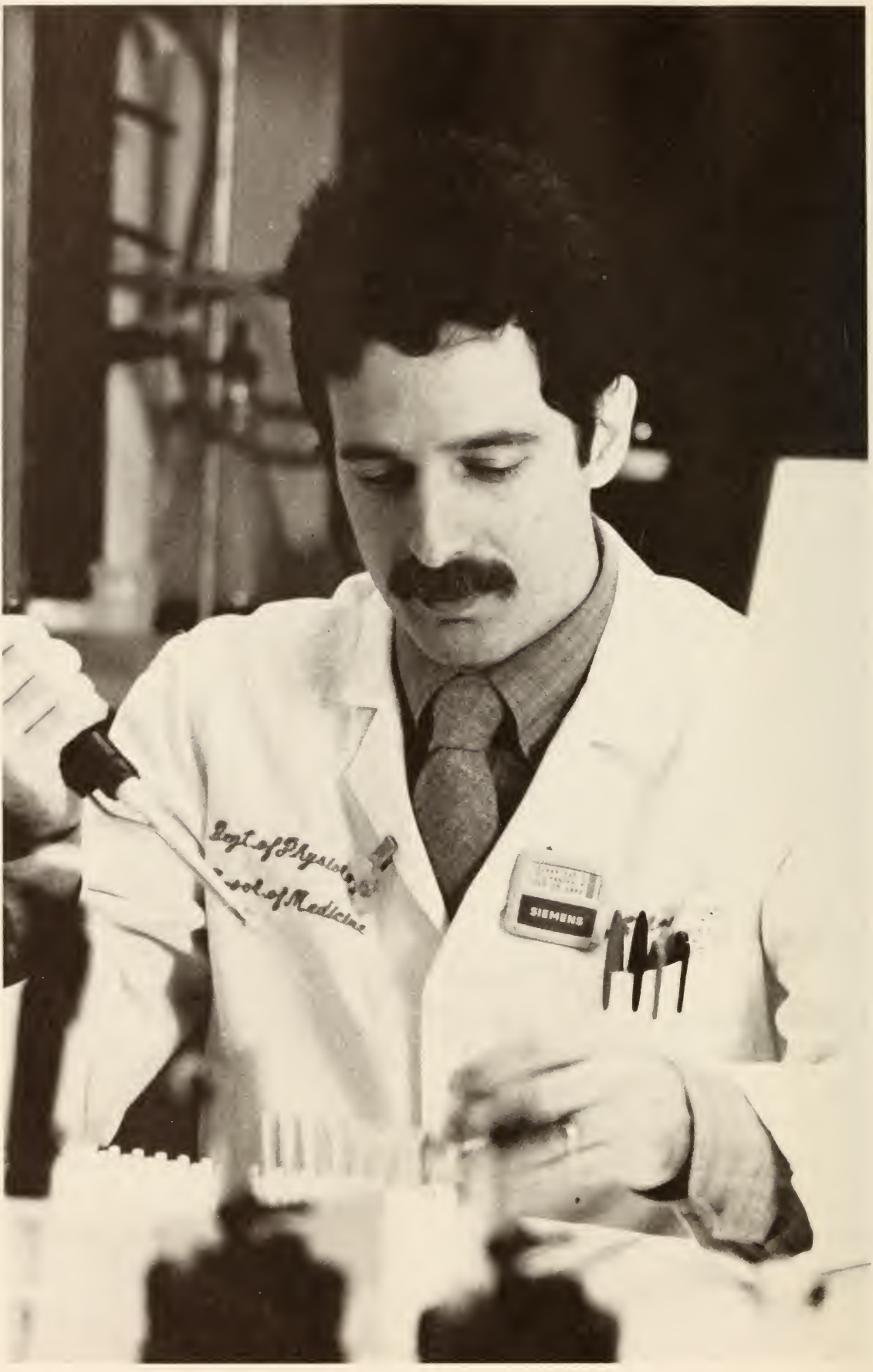
Athletic Facilities

The campus has a single-floor recreation area located atop the Pratt Street Garage. It is equipped with two squash courts, two racquetball/handball courts and two basketball courts which may also be used for tennis, badminton and volleyball. In addition, there is a weight room equipped with a 15-station Universal Gym and a sauna in each locker room. Facilities are available for use by UMAB students, faculty, staff and alumni. UMAB students with a current and valid I.D. are admitted free. Faculty and staff members desiring use of the gym are assessed a $25.00 per academic year membership fee. For additional information, contact the athletic manager at 528-3902.

The Student Union

The Baltimore Student Union is a cultural and social center for students, faculty, staff, alumni and guests. Activities and services of the Union include meetings, dances, receptions, movies and other forms of indoor activity. The student/faculty pub, the Synapse, is located in the lower level and offers food and cold beer.

The Union provides many special services for members of the university community: bulletin boards, check cashing, photocopying machines, telephones, game room, publicity rack, ticket service for University of Maryland College Park athletic events, food vending machines, ride board and a potpourri of special functions as well as on-campus housing information.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Accreditation

The University of Maryland is a member of the Association of American Colleges and is accredited by the Middle States Association of Colleges and Secondary Schools. The School of Medicine is accredited by the Liaison Committee on Medical Education, the accrediting body for the Association of American Medical Colleges and the American Medical Association.

Application

The University of Maryland School of Medicine participates with the American Medical College Application Service (AMCAS); all requests for a place in the first-year class must be initiated by an AMCAS application. AMCAS application request cards can be obtained from AMCAS, Suite 310, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036, and the Committee on Admissions, University of Maryland School of Medicine, 655 West Baltimore Street, Baltimore, Maryland 21201. In addition, they are usually available from the premedical advisory office at the undergraduate college. AMCAS application material is usually ready for distribution about mid-June of the year prior to the year the applicant wishes to enter medical school.

For the School of Medicine, the AMCAS application is the first of a two-stage application process and is due in Washington by December 1. The Committee on Admissions thoroughly reviews the AMCAS application and, based on the information contained in it, determines whether the second stage (School of Medicine) application form can be sent. An application fee ($20.00) to the School of Medicine is sent only with the filing of the second stage application form which is due by December 31. Every applicant will either be sent second stage application material or be informed that the committee cannot continue the application process.

It is in the best interests of the applicant that the application form and supporting credentials be filed early in the application period. Please do not have supporting credentials sent prior to filing a final application.

It is the responsibility of the applicant to see that all required credentials and the completed application packet are filed with and received by the Committee on Admissions. Please check with the Admissions Office to ensure that all materials have been received.

Baccalaureate Degree

Selected students entering the School of Medicine from colleges which usually grant a baccalaureate degree after the successful completion of the first year of medicine, are responsible for: 1) providing a certificate from the college or university certifying eligibility for this degree; and 2) meeting all requirements of the School of Medicine for advancement to the second year.

Early Decision Program

The University of Maryland School of Medicine has an Early Decision Program. This program allows students whose first choice of medical schools is the University of Maryland to be considered for admissions before the regular pool of applicants. The Committee on Admissions interviews all early decision applicants and makes a decision on these applicants by October 1. This program accepts only highly qualified applicants for whom the Committee on Admissions has no questions about their acceptability and therefore has no need to compare them to other applicants. By applying for early decision, the qualified applicant avoids having to make numerous other applications. Applicants with marginal academic credentials are discouraged from applying through this program.

To be considered for the Early Decision Program, the applicant must apply only to this school by the AMCAS deadline of August 1. He or she must provide all supplementary information by September 1. Interviews will take place between mid-August and late September. No

one will be accepted without an interview. If offered a place by this school, the applicant cannot apply elsewhere.

The Committee on Admissions can make one of three decisions for each Early Decision applicant: 1) acceptance into the school; 2) outright rejection; or 3) neither acceptance nor rejection but rather placement into the regular applicant pool for review at a later time. Each applicant will be notified promptly of the Committee on Admission's decision so that those not accepted can apply elsewhere.

If you apply to this school under the Early Decision Program, you cannot apply to any other medical school until you are notified that you were not accepted through the program.

Applicant Selection

Academic achievement, extracurricular activities, personal characteristics, recommendations from college instructors or the premedical committee, scores on the new Medical College Admissions Test (MCAT) and personal interview are all carefully considered in evaluating an applicant. Academic achievement and/or high scores on MCAT do not in themselves ensure acceptance. Of equal concern to the Committee on Admissions are the applicant's personality, character, motivation, sincerity of purpose and an assessment of the applicant's potential to perform as a medical student and as a future physician. Communications skills, honesty, integrity, acceptance and carrying out of responsibility and involvement in activities in the area(s) of the applicant's interest(s) must also be demonstrated.

Applications from persons with outstanding credentials from other areas of the United States and Canada are welcome and will receive all possible consideration. However, preference in the selection process is given to residents of the state of Maryland. Because of the large number of persons applying, applications can be processed only from citizens of the United States or Canada. A permanent alien immigrant is considered as being a citizen for selection purposes.

Admission to First Year

Careful attention should be given to choice of undergraduate electives, especially in the sciences. The student should plan a four-year curriculum with a suitable arts or science major leading to a bachelor's degree. A major in an area other than science is quite acceptable although it is not our intention to divert students from a science major if this is their field of choice. The opportunity to place out of biochemistry by written examination is offered.

Applicants who choose a nonscience major should take a sequence of science courses which will demonstrate their academic ability to handle the demands made by a science-oriented curriculum.

A minimum of 90 semester hours of acceptable college credit is required, exclusive of physical education and military science. This must be earned in colleges of arts and sciences whose names appear on the current list of Accredited Institutions of Higher Education as compiled by the National Committee of Regional Accrediting Agencies of the United States. Applicants who will have earned a bachelor's degree in arts and sciences from an approved college or university before registration for medical school will be given preference over applicants who have not completed the requirements for the bachelor's degree. The only courses accepted are those which are approved for credit towards a degree by the university or college attended as well as the University of Maryland.

The following college courses and credits, at an acceptable level, are required before registering for medical school:

	Semester Hours
General biology or zoology	8
Inorganic chemistry	8
Organic chemistry	6
General physics	8
English	6

No more than 60 hours can be accepted from accredited junior colleges and then, only if these credits are validated by a college offering a Bachelor of Arts or Science degree.

Selected students entering the School of Medicine from colleges which usually grant a baccalaureate degree after the successful completion of the first year of medicine are responsible for: 1) providing a certificate from the college or university certifying eligibility for this degree; and 2) meeting all requirements of the School of Medicine for advancement to the second year.

A letter of evaluation is required from the undergraduate premedical committee for those applicants still enrolled in or recently graduated from undergraduate college. If there is no premedical committee, letters are requested from two science and one nonscience course instructors. When letters from other sources are sent, permission to use these instead of letters from your course faculty must be granted by the Associate Dean for Admissions. These letters should be only from persons who can candidly and critically evaluate the applicant's accomplishments, productivity and character. Consequently, such letters are usually from individuals who have supervised the applicant in some special experience in the applicant's area of interest or work. In any case, all letters of evaluation should be sent directly to the Committee on Admissions; they are not to be sent to AMCAS.

An evaluation of the applicant's credentials is made by members of the Committee on Admissions to determine if an interview is to be requested. This decision is based upon a composite estimate of the applicant's ability and future promise in the field of medicine as measured by academic record to date, performance on the MCAT, recommendations of the premedical faculty, extracurricular activities, an assessment of the appplicant's personal characteristics and the applicant's overall standing as compared to that of the other applicants applying that year. Such interviews must be scheduled in advance at the initiative of the committee.

The MCAT is usually taken in the spring and must be taken no later than the fall of the year preceding the year of entrance. Applicants should write to the American College Testing Program, P.O. Box 414, Iowa City, Iowa 52240, for further information and registration forms, or to the Committee on Admissions.

In the selection process, the Committee on Admissions must use as the applicant's residency status that which is in effect on the last day applications can be received (December 31). The Office of Admissions and Registrations, Room 326, Baltimore Student Union, 621 West Lombard Street, Baltimore, Maryland 21201; (301) 528-7480; is responsible for all decisions regarding residency. This office is a central campus office. All questions, complaints and appeals regarding residency status should be

directed to this office. Nonresidents who matriculate here should plan on maintaining that status throughout the four years of medical school. Current standards for reclassification to in-state status are rigorous and anticipated changes in policy will make reclassification more difficult.

For further information regarding the admissions process in general, the applicant is referred to a booklet entitled "Medical School Admissions Requirements" which can be obtained from the Association of American Medical Colleges, Suite 200, One DuPont Circle, N.W., Washington, D.C. 20036.

Advanced Standing

Students who have attended medical schools in the United States are eligible to file application for admission to the second and third year classes only. Application must be made no later than March 1 of the year of desired admission. Applicants for advanced standing must meet the current first-year entrance requirements in addition to presenting acceptable medical school credentials and a medical school record based on courses which are equivalent to similar courses in this school. This includes taking the new MCAT examination. Applicants for admission with advanced standing to the Year III Class are also required to take Part I of the National Board Examinations.

No student can be considered who has been dismissed from any medical school unless his former dean submits a letter addressed to the Committee on Admissions stating that the student is reinstated in good standing and eligible for promotion. No student can be considered who is not eligible for promotion at the time of transfer.

Persons who already hold the degree of Doctor of Medicine cannot be admitted to the medical school as a candidate for that degree from this university.

Citizens of the United States who are studying medicine in foreign medical schools may apply for admission to the Year III Class only. Application must be made no later than March 1 of the year of desired admission. Applicants for advanced standing must meet the first year entrance requirements, including the new MCAT examination; and submit acceptable medical school credentials as well as a medical school record based on courses equivalent to similar courses in this school. In addition, they must take the Medical Sciences Knowledge Profile (MSKP) test. Students in foreign schools are no longer permitted to take Part I of the National Board Examinations. Applications for the MSKP must be made to:

MSKP — Association of American Medical Colleges, Suite 301
1776 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Due to the limited number of vacancies in the Year III Class, strong preference is given to residents of Maryland.

General Rules

The university authorities reserve the right to make changes, whenever appropriate, in the curriculum, the requirements for advancement and graduation, fees, and rules and regulations.

Matriculants are required to accept the provisions of the Judicial Board and agree to assume its obligations prior to registration.

Students who report for classes later than one week after the scheduled time will be permitted to begin work only by permission of the dean. Attendance at all scheduled classes is expected.

Notice of change of address should be submitted promptly to the Dean's Office and to the Registrar's Office.

All new students, whether they are admitted to the first-year class or with advanced standing, are expected to attend an orientation for new students.

Grades and Promotion

The final grades for all courses in all four years should be recorded as follows:

- A (Excellent)
- B (Very Good)
- C (Satisfactory)
- D (Unsatisfactory)
- F (Failing)
- Inc This designation will be used only when mitigating circumstances (e.g., illness, unavoidable absence) have prevented the student from completing the course on time. It is to be viewed as a nonprejudicial entry on the student's record. It must be noted that the grade of "Inc" remains on the official student transcript.

An award of "Honors" is to be given to a student who: 1) receives a final grade of "A"; and 2) performs an additional scholarly effort that is clearly outstanding.

In addition to the final objective grade and the Honors category, subjective evaluation of the student should be included to evaluate the student's overall performance. Appropriate evaluation forms are designated for this purpose.

Established rules for advancement and dismissal during all four years have been approved by the faculty and student body representatives of the School of Medicine Council. All regulations related to grading, advancement and dismissal are included in the Academic Handbook given to all entering students at orientation.

The faculty reserves the right to determine whether a student may withdraw, repeat, advance or graduate on academic or moral and personal grounds, including traits of character.

Disclosure of Student Information

In accordance with "The Family Education Rights and Privacy Acts of 1974" (PL 93-380), popularly referred to as the "Buckley Amendment," disclosure of student information, including financial and academic, is restricted. Release to anyone other than the student requires a written waiver from the student. A full policy statement may be found in the current UMAB campus information guide issued to all incoming students.

Equal Opportunity

The University of Maryland, in all its branches and divisions, subscribes to a policy of equal education opportunity for men and women of all races, creeds and ethnic orgins. The school has the objective of securing a broad racial, sexual and ethnic balance in its enrollment. To achieve this objective it gives every consideration to minority student applications.

Salary and Employment Information

Students admitted to the University of Maryland School of Medicine can be assured of remunerative employment after satisfactory completion of the course of study and receipt of the degree, Doctor of Medicine. A high percentage of graduates enter the practice of medicine after completion of residency training. There appears to be a moderate excess of physicians in some disciplines of medicine and in some geographic areas. However, the overall need for persons holding the MD degree is such that all graduates of the School of Medicine may expect a satisfactory income.

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Determination of In-State Status

An initial determination of in-state status for admission, tuition and charge-differential purposes will be made by the university at the time a student's application for admission is under consideration. The determination made at that time, and any determination thereafter, shall prevail in each semester until the determination is successfully challenged prior to the last day available for registration for the forthcoming semester. A determination regarding in-state status may be changed for any subsequent semester if circumstances warrant redetermination.

In those instances where an entering class size is established and where an application deadline is stated, in-state conditions for admissions must be satisfied as of the announced closing application date.

Petitions for review of eligibility and questions concerning the university policy should be directed to the Office of Admissions and Registrations, Room 326, Baltimore Student Union, 621 West Lombard Street, Baltimore, Maryland 21201.

Students classified as in-state for admission, tuition and charge-differential purposes are responsible for notifying the Division of Admissions and Registrations, in writing, within 15 days of any change of circumstances which might affect their classification at the Baltimore City Campus.

A complete policy statement may be obtained from the School of Medicine's Committee on Admissions or the UMAB Division of Admissions and Registrations.

Tuition and Fees for 1984–1985

	Fall	*Spring*	*Total*
Application Fee/Matriculation Fee*	$ 20.00	$ —	$ 20.00
Fixed Charges—In-State	2,408.00	2,408.00	4,816.00
Fixed Charges—Out-of-State	4,815.00	4,815.00	9,630.00
Instructional Resources Fee	22.00	22.00	44.00
Student Activities Fee	21.50	21.50	43.00
Student Health Fee	25.00	25.00	50.00
Hospital Insurance (Individual)**	139.02	139.02	278.04
Student Liability Insurance***	66.00	—	66.00
Supporting Facilities Fee	60.00	60.00	120.00
Dormitory Fee****	830.00	830.00	1,660.00
Graduation Fee—Seniors	—	20.00	20.00
Student Government Fee	3.00	3.00	6.00

**An application fee of $20 should be submitted with the formal application to the School of Medicine. This fee will be applied against the matriculation fee for accepted students. A deposit on tuition of $100 is required of all applicants before the expiration date specified in the offer of acceptance. The deposit will be credited against first semester charges. Please be advised that this is a nonrefundable deposit.*

***Hospital insurance is required of all full-time students. A brief outline of the student health insurance program is furnished each student. Students with equivalent insurance coverage must provide proof of such coverage at the time of registration and obtain a hospital insurance waiver. Rates are subject to change.*

****Student liability (malpractice) insurance is required of all students.*

*****Rate based on 10-month year. Transient rates available for summer.*

Fees

The *application and/or matriculation fee* partially defrays the cost of processing applications for admission and enrollment data in the professional schools. These fees are not refundable.

A *student health fee* is charged to help defray the cost of providing health services which include routine examinations and emergency care. Acceptable medical insurance is required in addition to the student health fee.

Diploma fees are charged to help defray costs involved with graduation and commencement.

The *instructional resources fee* is charged to provide funds for supplies, materials, equipment and other costs directly associated with the instructional program.

Student activities fees are used to meet the costs of various student activities, student publications and cultural programs. The Student Government Association, in cooperation with the Dean's Office, recommends expenditure of the fees collected.

The *supporting facilities fee* is used in support of the expansion of various facilities on campus that are not funded or are partially funded through other sources.

The *fixed charges fee* meets a portion of the costs for the educational program and supporting services.

A service charge is assessed for dishonored checks. It is payable for each which is returned unpaid by the drawee bank on initial presentation because of insufficient funds, payment stopped, postdating or drawn against uncollected items.

For checks up to $50 — $5
For checks from $50.01 to $100 — $10
For checks over $100 — $20

Late registration fees defray the cost of the special handling involved for those who do not complete their registration on the prescribed days.

No diploma, certificate or transcript will be issued to a student until all financial obligations to the university have been satisfied.

The university reserves the right to make such changes in fees and other charges as may be necessary.

Registration

To attend classes at the UMAB campus it is necessary to process an official registration. All students are required to register each term in accordance with current registration procedures. Fees are due and payable on the dates specified for registration. Registration is not complete until all financial obligations are satisfied. Students who do not complete their registration, including the payment of their bill on the registration days, will be subject to a late registration fee.

Courses taken concurrently with a UMAB registration at another campus or institution must have program approval in advance by the appropriate UMAB officials. Off-campus registration forms are available in each dean's office and the Registrar's Office.

Although the university regularly mails bills to preregistered students, it cannot assume responsibility for their receipt. If any student does not receive a bill prior to the beginning of a semester in which he or she has preregistered, it is that student's responsibility to contact the Registrar's Office or Student Accounting, Howard Hall, during normal business hours.

Students who arena register or preregister and subsequently decide not to attend UMAB must notify the Registrar's Office, Room 326, Baltimore Student Union in writing, prior to the first day of classes. If this office has not received a request for cancellation by 4:30 p.m. of the last day before classes begin, the university will assume the student plans to attend and accepts the financial obligation.

After classes begin, students who wish to terminate their registration must submit an application for withdrawal to the Registrar's Office. Students are liable for all charges applicable at the time of the withdrawal. All checks and money orders should be made payable to the University of Maryland for the exact amount of the actual bill.

If a satisfactory settlement or agreement for settlement is not made with the Business Office within 10 days after a payment is due, the student is automatically barred from attendance at classes and will forfeit the other privileges of the School of Medicine.

Withdrawal and Refunds

Students who wish to leave the School of Medicine at any time during the academic year are required to file a letter of resignation with the dean. In addition, an Application for Withdrawal Form bearing the proper signatures must be filed with the Registrar's Office. The student must satisfy the authorities that he or she has no outstanding obligations to the school and must return his or her student identification card.

If the above procedures are not completed, the student will not be entitled to honorable dismissal and will forfeit the right to any refunds to which that student would otherwise be entitled. The date used in computing refunds is the date the application for withdrawal is signed by the dean.

Academic Standing. Students who voluntarily withdraw during an academic semester will be given no credit. Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded at the Registrar's Office. Students who withdraw from the medical school and later desire readmission must apply to the Committee on Admissions unless other arrangements have been made with the dean's written consent.

Refunds. Students officially withdrawing from the school will be credited for all academic fees charged to them less the matriculation fee, in accordance with the following schedule from the date instruction begins:

Two weeks or less	80 percent
Between two and three weeks	60 percent
Between three and four weeks	40 percent
Between four and five weeks	20 percent
After five weeks	0 percent

Leaves of Absence. Students who are in good standing may be granted one year's leave of absence on request of the dean. Longer leaves can be arranged only under special circumstances with the exception of those students in the combined MD/PhD program.

Required Equipment

Dissecting Instruments. At the beginning of the first year, all freshmen must possess a complete set of dissecting instruments similar to the ones on display in the bookstore.

Microscopes. All freshmen must also provide themselves with a standard microscope. All microscopes must conform to the following specifications:

1. Binocular
2. 10X oculars (wide field oculars are recommended, but not required)
3. Quadruple nose piece
4. Four parfocal objective lenses:
   30 mm., 4X, 0.1 N.A.
   16 mm., 10X, 0.25 N.A.
   4 mm., 43X, 0.65 N.A.
   1.8 mm., 97X, oil immersion, 1.25 N.A.
5. Mechanical stage to accommodate standard size microscopic slides (the stage need not be graduated)
6. Light source (built-in on base is preferable)
7. Substage condenser
8. A carrying case (recommended)

Students are cautioned with respect to the purchase of used or odd-lot microscopes since some of the older instruments are in poor optical or mechanical condition. Second-hand microscopes must be approved by the department and students should obtain approval prior to purchase.

Based on the determination of financial need, first-year medical students may qualify for loan of a microscope.

Other Equipment. By the second year, medical students are required to have an ophthalmoscope, otoscope, a blood pressure cuff and stethoscope. The estimated cost of these items, plus other essentials such as lab coats, is $400 to $450.

Financial Assistance

The University of Maryland School of Medicine's financial aid program is available for medical students who demonstrate financial need. Through a varying combination of grants, scholarships, long and short term loans, and part-time employment, students may receive assistance in meeting educational expenses. In addition to the school resources, outside funding agencies make financial assistance available to qualified medical students.

An application for financial aid must be submitted annually, preferably by February 15, to be considered for assistance for the following academic year. Entering students may request financial aid applications from either the Committee on Admissions or the Student Aid Office. Students currently enrolled in the School of Medicine may obtain forms from the Student Aid Office.

Student assistance is awarded on the basis of demonstrated financial need. Eligibility for financial aid is dependent upon the student maintaining good academic standing and full-time attendance. When determining the amount to be awarded, the financial aid committee considers the following: 1) the income, assets and resources of the student and student's family; 2) support available to the student from nonuniversity sources; and 3) the costs reasonably necessary for full-time attendance at the school.

Renewal of financial aid for succeeding years is dependent upon annual submission and review of a financial aid application, good academic standing, the student's continued financial need, and the availability of funds.

A complete description of the procedures used to evaluate applications for aid, of the student budgets used, and of various university, state and federal programs, can be found in the brochure "Financial Aid at UMAB."

Medical School Funds

Maryland State Grants. Grants are made to disadvantaged students who are residents of Maryland.

Dean's Scholarship. Funds provided the school are awarded primarily to nonresident students.

Desegregation Grants. First-year minority students who are Maryland residents are eligible for these funds. Desegregation grants will normally be used to reduce the amount of loan included in the financial aid award.

Health Professions Loan. Medical students are eligible for loans equal to tuition plus $2,500 annually. Interest accrual at 9% and principal payments are deferred until one year after graduation at which time both interest and principal payments begin. Both interest and principal may also be deferred for internships and residencies and for up to three years of service in the uniformed services (including National Health Service Corps) and the Peace Corps.

Medical Alumni Association. Interest-free loans are available.

Work Study. The College Work-Study Program provides jobs for students who need financial aid and who must earn a part of their educational expenses. Jobs are arranged either on- or off-campus with a public or private nonprofit agency. If you are eligible, you may be employed for as many as 20 hours per week.

Private and Endowment Funds. From bequests and private donations, the School of Medicine has established private and endowment accounts to provide fellowships, scholarships and loans for students on the basis of their academic achievement and financial need. The amounts of these fellowships, scholarships and loans vary and are awarded on an annual basis in accordance with school policy.

The availability of support from each of the funds listed below is dependent upon the income generated. In addition, since many of the funds are governed by specific provisions set forth by the donors, awards must be made accordingly.

Endowed Fellowships

- Dr. and Mrs. Frederick J. Balsam Fellowship in Rehabilitation Medicine
- Dr. Paul R. Brown Research Fellowship in Genito-Urinary Disease
- Jessie M. Cook Research Fellowship in Circulatory Diseases
- Issac E. Emerson Fellowship in Pharmacology
- Dr. Jose R. Fuentes Memorial Fellowship in Obstetrics and Gynecology
- Dr. Howard C. Silver Memorial Student Fellowship in Family Medicine
- John F. B. Weaver Fellowship in the School of Medicine

Scholarships

- Balder Scholarship Fund
- Robert W. Buxton Scholarship
- Israel and Cecelia E. Cohen Scholarship
- William H. Crim Scholarship
- Marcia Thomas Duncan Medical Scholarship
- A. Lee Ellis Scholarship
- Arthur Wright Erskine Scholarship
- John E. Esnard Fund
- Sharon Fox Scholarship
- Samuel Leon Frank Scholarship
- Laurence Gale Memorial Scholarship
- Joseph B. Ganey Scholarship
- Greater Baltimore Medical Center Scholarship
- Harry Gudelsky Fund
- Horace Bruce Hetrick Scholarship
- Margaret A. Hicks Scholarship
- Hitchcock (Charles H. and Charles M.) Scholarships
- G. D. Jackson Scholarship

Leo Karlinsky Scholarship
Elsie Larrimore Scholarship
Emmett and Ruth Light Scholarship
Alex J. and Clara Maysels Scholarship
Henry Rolando Scholarship Fund
Morton and Elaine Schwartz Scholarship
David Street Memorial Scholarship
Charles R. Thomas Scholarship
Arnold Tramer Scholarship Fund
Michael Vinciquerra Scholarship
Clarence Geneva Warfield Scholarship
John F. B. Weaver Scholarship
John L. Whitehurst Fund
Sara A. Whitehurst Fund
Randolph Winslow Scholarship
Walter M. Winters Scholarship
Henry Zoller, Jr. Scholarship

Loans

Balder Loan Fund
Foundation Loan Fund Class of 1934
Gold-Steinberg Memorial Loan Fund
Issac Gutman Loan Fund
Sandra Minna Hoffman Memorial Student Loan Fund
W. K. Kellogg Loan Fund
William and Sarah Kraut Loan Fund
Michael H. Lipman Loan Fund
Joseph Lipskey Loan Fund
Marie K. Manger Loan Fund
Frank C. Marino Loan Fund
Medical Alumni Association Student Loan Fund
Medical School Council Loan Fund
Edward and Lina Meirhof Loan Fund
Memorial Loan Fund—School of Medicine, Class of 1916
Nataro Family Student Loan Fund
Jessie Smith Noyes Loan Fund
Charles Pfizer Loan Fund
Dr. J. M. H. Rowland Memorial Student Loan Fund
Senior Class Loan Fund
Senior Class of 1945 Loan Fund
Christopher C. Shaw—Class of 1931 Loan Fund
Hugh R. Spencer Loan Fund
Webster M. Strayer Loan Fund
Jimmie Swartz Foundation Loan Fund
Wetherbee Fort Loan Fund

Outside Sources

Students are encouraged to consider financial aid resources available through sources outside of the School of Medicine. Each of the programs requires a separate application; while application deadlines vary, most are in early spring.

Maryland State Scholarship Board: Professional School Scholarships. One-year grants of $200—$1,000 can be sought for subsequent years by proper reapplication.

Maryland State Scholarship Board: Family Practice-Medical Scholarships. These awards are for students enrolled in the School of Medicine of the University of Maryland and pursuing a Doctor of Medicine degree. A recipient must have been a Maryland resident for five years, have definite financial need, and be willing to enter the general practice of medicine serving the state of Maryland in an area of need (bond required). These $1,500 per year awards continue for up to four years and no renewal application is required.

National Medical Fellowships. Need-based awards to minority medical students. For further information and applications write: National Medical Fellowships, 250 West 57th Street, New York, New York 10019.

Maryland Higher Education Loan. The guaranteed student loan program is a nationwide program known in different states by different names, e.g., guaranteed loans, federally insured loans, Maryland Higher Education loans. They are all part of the same program, i.e., one which enables you to borrow directly from a bank, credit union, savings and loan association or other participating lender willing to make the loan. The loan is guaranteed by a state or private nonprofit agency or insured by the federal government.

A graduate or professional student may borrow up to $5,000 a year (in some states these amounts may be less). The interest rate of these loans is 9%.

The total amount outstanding for graduate or professonal study is $25,000, including loans made at the undergraduate level.

The loan must be repaid. Payments normally begin six months after you graduate or leave school, and you may be allowed to take up to 10 years to repay the loan. The amount of your payments depends upon the size of your debt and your ability to pay; but in most cases you must pay at least $360 a year unless the lender agrees to a lesser amount.

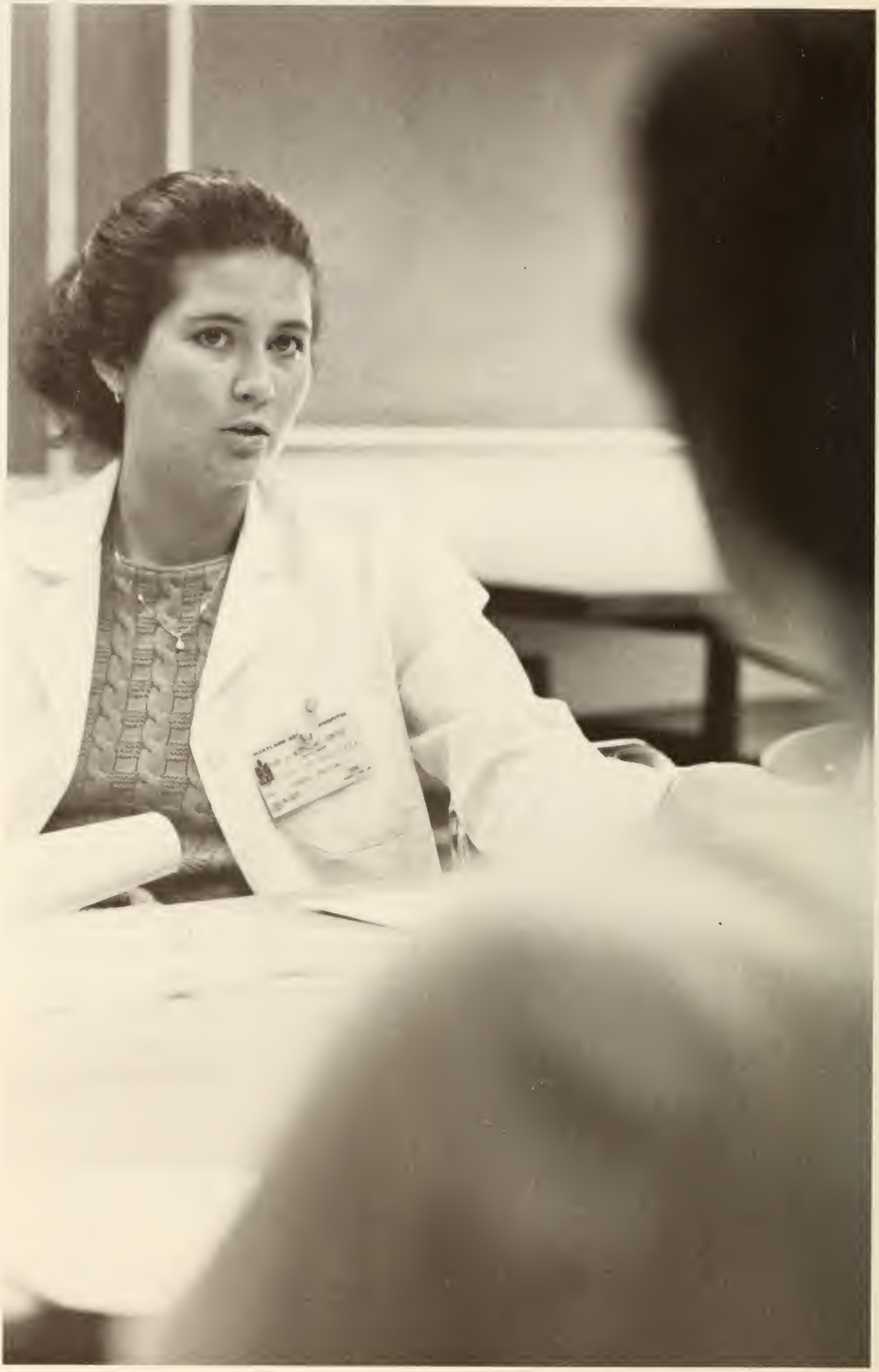
You do not have to make payments for up to three years while you serve in the Armed Forces, Peace Corps or full-time volunteer programs conducted by ACTION. In addition, deferment is available any time you return to full-time study at an eligible institution or pursue a course of study under a graduate fellowship program approved by the Commissioner of Education. A single deferment for a period of not more than one year is also provided for students who are unable to find full-time employment.

Health Education Assistance Loan. U.S. citizens who are full-time students may borrow up to $20,000 per year to a cumulative maximum of $80,000. The loans are made by commercial lenders. Students may not borrow from another guaranteed student loan program (such as the Maryland Higher Education Loan) during the same academic year covered by the Health Education Assistance Loan.

There is no federal interest subsidy under this program. Interest rates are variable and may be paid on an ongoing basis or accrued until repayment begins. If interest is accrued, it will be compounded semi-annually and added to the loan principal when repayment begins. An insurance premium, not to exceed 2% per annum, will be charged at the time an individual loan is processed.

Repayment will begin 9 to 12 months after all formal training, including that provided in accredited internship and residency programs, has been completed. A deferment of principal will be granted to borrowers who return to full-time study at an institution of higher education or, for up to three years, for training in an internship or residency program; service in the Armed Forces, Peace Corps or specified program under ACTION; or the National Health Service Corps after the repayment period has commenced. Borrowers may take from 10 to 15 years to repay the loan once repayment commences.

Borrowers may apply for federal payment of both principal and interest to a maximum of $10,000 a year through service in the National Health Service Corps or practice in a health manpower shortage area. This federal payment for service will be at the option of the federal government and available only to the extent that vacancies exist in the National Health Service Corps or if there are shortage areas in the academic discipline for which the borrower obtained training.



Curriculum

Broadly stated, the education objectives of the School of Medicine are:

To educate students in a manner which will enable them to achieve a high level of professional expertise and social awareness within a broad base of medical competency.

To introduce medical students to the concept of primary care and to provide sufficient opportunities to develop the knowledge and skills necessary for the delivery of primary care services.

To provide students at every level of training, the opportunities to pursue areas of special interest whether for intellectual stimulation or for furtherance of a career choice.

To encourage a variety of individuals to form the core of highly competent professionals who will practice medicine as generalists or specialists, teach full- or part-time, or continue to add to knowledge through research.

The curriculum varies from year to year to meet changing needs of graduate medical education and health care delivery. More specifically, the curriculum has been designed to meet medical educational contingencies as they arise. To this end, the faculty has established as a basic principle, continuous curricular review and has empaneled a standing Curriculum Coordination Committee which is composed of year I, year II and clinical year faculty chairpersons; special course chairpersons; faculty members-at-large; and representatives of the student body. This committee is charged with the responsibility for monitoring the curriculum and recommending changes whenever they are deemed necessary.

Potential students are advised that there is a strong possibility that future curriculum developments may necessitate a five-and-one-half-day (Saturday mornings) structure of compulsory attendance during any of the four years of medical education. The present curriculum does include a Saturday-morning course in correlative medicine for which all third- and fourth-year students are held accountable. Also, the current clinical curriculum frequently involves weekend attendance. A weekend session dealing with the topic, intimate human behavior, is included in year I curriculum. Furthermore, students may be required to spend a block of time in training sites out of the Baltimore metropolitan area during their stay in medical school.

First and Second Years. There are two four-month core sessions in each of the first and second years. During the months of January and June, elective courses will be taught with a minimum requirement of eight elective freshman/sophomore courses to be achieved by medical students prior to advancement into the third year. These elective courses may be taken during any one of the four minimesters at the student's and advisor's discretion and as approved by the Elective Committee.

During the freshman year, the following core courses are taught: Anatomy (including gross anatomy and histology), Biochemistry, Biostatistics, Behavioral Science, Physiology and Biophysics (combined), Genetics, and Neurosciences (interdisciplinary). In addition, through the freshman year interdisciplinary course, Introduction to Clinical Practice, students are exposed to a variety of subjects such as interviewing techniques, emergency medical care and normal as well as specialty physical diagnosis. Correlative Medicine, another interdisciplinary course, attempts to stress the clinical aspect of the basic sciences. It is taught in the freshman and sophomore years. Intimate Human Behavior, an interprofessional course under the aegis of the Curriculum Coordination Committee, is required of freshman medical students and is open to students from the other professional schools on campus.

During the sophomore year, students enroll in the following core courses: Microbiology, Pathology, Pharmacology and Experimental

Therapeutics, Physical Diagnosis, Psychiatry, and Epidemiology and Preventive Medicine. Introduction to Clinical Practice is continued in the sophomore year including courses in specialty physical diagnosis and medical ethics. There is a continued emphasis on clinical correlation throughout the year with combined instruction by basic and clinical science faculty. This correlative teaching provides the sophomore medical student with the full spectrum of the basic science foundation and the clinical science presentation of disease states. Attendance in all small group experiences, including laboratories and discussion groups, is mandatory.

Recently, an independent study program has been added to the first and second years of study. In addition, training and certification in cardiopulmonary resuscitation (CPR) is required during these preclinical years.

Third and Fourth Years. The clinical years curriculum is currently under revision. At present it requires the student to spend a minimum of one summer, between the sophomore and junior or junior and senior years, taking clinical science courses at the University of Maryland School of Medicine. The two clinical years are viewed as a total unit with the student assuming progressive patient care responsibility. The first clinical experience consists of the following four 12-week rotations: 1) internal medicine; 2) surgery; 3) pediatrics and psychiatry; and 4) obstetrics and gynecology, radiology, and neurology. The student will take these four 12-week quarters according to an individual schedule. Course order for individual students will be based on logistical sequencing. The sum of these quarters provides a 48-week introduction to clinical science.

Following that experience, the student will have a 24-week block that includes an eight-week elective period in which the student may select one or two electives. An additional eight weeks will be spent in a student internship in one of four clinical fields: medicine, surgery, pediatrics or family practice. Here the student will be given an opportunity for primary patient care responsibility over a prolonged period of time. This rotation will generally be given at the University of Maryland Medical System or, on occasion, at an approved affiliate. The third two-month segment will be a consecutive eight-week experience in an ambulatory setting. These out-patient settings will include internal medicine, pediatrics and family practice, with emphasis on epidemiology and preventive medicine, and rehabilitation medicine. Attendance in all course work in clinical areas is mandatory. In the additional free time, the student may audit available electives. The combined clinical years program equals the usual 72-week combination for the final two years. However, it supplements the strong background of clinical science with a definitive opportunity for primary responsibility during the subsequent clinical experiences. This curriculum is designed to better prepare the medical student for the increasing responsibility demanded by the new specialty residency programs adopted throughout the country.

The course in Correlative Medicine, taught during years I and II, has recently been incorporated into the clinical years curriculum, and is held on Saturday mornings. Additionally an introductory course in advanced life support will be offered during the clinical years.

Combined MD/PhD Programs

Research in human disease requires investigators with interests and training in both basic science and clinical medicine. The primary objective of the MD/PhD Program is to train medical scientists. These individuals will differ from most basic scientists by having the clinical background necessary for the management and investigation of human disease. Equally, the MD/PhD medical scientist will differ from most physicians by having extensive laboratory experience and the scientific background that can lead to the application of a basic scientific approach to studies of clinical problems. To achieve this goal, a flexible program of combined medical and scientific training will be provided to highly motivated students of superior research and academic potential. This program will utilize fully the broad range of basic and clinical science opportunities that are avail-

able at the University of Maryland. The MD/PhD program is offered through the Departments of Anatomy, Biochemistry, Biophysics, Epidemiology and Preventive Medicine, Human Genetics, Microbiology, Pathology, Pharmacology and Experimental Therapeutics, and Physiology. The School of Medicine also offers an MD/MS in Preventive Medicine.

The degree requirements for the combined MD/PhD and MD/MS programs will be equivalent to those of the separate degree requirements for the Doctor of Medicine in the School of Medicine and the Master of Science or the Doctor of Philosophy in the Graduate School of the University of Maryland. It is anticipated that the MD/PhD degree can be completed within six to seven years.

Although the schedule of training can be flexible, typically entering students will complete the two preclinical years as regular medical students and will receive graduate credit for many courses taken during this period. The students will use minimesters and summers to gain research experience in their basic science department. During the preclinical period, students should attend research seminars in their graduate departments. In addition, students may "rotate" through the various laboratories in the selected graduate department in order to facilitate the final choice of a thesis advisor. After the preclinical years, students will perform as full-time graduate students taking required graduate courses and seminars, and primarily completing the dissertation for approximately two years. Subsequently, students will begin the clinical clerkships. Elective time during the clinical years may be used to complete PhD research. This sequence of events is general; it is possible that a given student may complete the program with a different sequence. These matters are to be developed by the student within the MD/PhD Program in consultation with their advisors.

Applicants to the MD/PhD Program will be required to meet the admissions requirements of the School of Medicine and the Graduate School of the University of Maryland. Qualified candidates will then be interviewed and selected by the MD/PhD Program Advisory Committee. Applications will be accepted from qualified juniors or seniors at any accredited university, as well as from medical students currently enrolled at the University of Maryland. In addition, applications will be accepted from students currently enrolled in a graduate level program (i.e., MS, PhD) at the University of Maryland School of Medicine or other accredited universities. An application form is included in the admissions packet for the medical school.

A small number of applicants, not to exceed three from each entering class, may be awarded a waiver of tuition (at the financial level of Maryland resident tuition) for a maximum of six years. The waiver will be awarded based upon the student's academic excellence. A stipend may be provided by the research sponsor during the PhD or MS in Preventive Medicine portion of the program.

For further information contact: Stephen R. Max, PhD; Professor, Neurology and Biochemistry; Director, MD/PhD Program, University of Maryland School of Medicine, Baltimore, Maryland 21201; (301) 528-3990.

Short-Term Research Training Fellowship Program

The School of Medicine has a commitment toward the development of MD researchers. The school recognizes the value of maintaining the connection between the treatment of patients and the science which enables patient care to advance. By bridging both areas, the physician-researcher is in an ideal position to translate research into clinical application, and patient problems into laboratory investigation.

In an effort to enhance student involvement in biomedical investigation, the school encourages students to participate in supervised research projects through the dean's Short-term Research Training Fellowship Program. Major areas of research interest at the School of Medicine include: cancer and environmental diseases; cell biology; neurobiological sciences and infectious, endocrinologic and cardiovascular diseases. Approximately 80% of the research suppport at the School of Medicine is devoted to work done in these broad areas.

The fellowships are awarded on a competitive basis and provide, tax-free, $1,200 to $1,800 for two to three months of biomedical investigation. These experiences are available to incoming students during the summer before their freshman years, and to medical students in all classes. Students selected to participate in the program also participate in a summer seminar series, and may give presentations of their research to students and faculty on Student Research Day, an annual event held each spring.

Graduate Programs

Graduate courses and research opportunities leading to advanced degrees are available in most of the basic science departments of the School of Medicine. Students pursuing graduate work must be admitted to the Graduate School and meet the requirements of the Graduate School and the department. A catalog of courses and information concerning the graduate programs offered at the University of Maryland at Baltimore can be obtained from the Office of the Dean for Graduate Studies and Research, University of Maryland at Baltimore, Baltimore, Maryland 21201.

The Graduate School is not an extension of undergraduate programs. It was created for the preparation of those who, in the future, will carry on the spirit of individual inquiry. Thus it promotes and provides an atmosphere of research and scholarship for both students and faculty. Twenty programs are currently conducted by the graduate faculty of the Schools of Dentistry, Medicine, Nursing, Pharmacy, and Social Work and Community Planning on the UMAB campus.

Residencies and Fellowships

Graduate specialty programs for residents and fellows at the University of Maryland Medical System are approved by the Council on Medical Education of the American Medical Association and in Dentistry by the American Dental Association.

The approved first-year resident (PGY 1) positions are filled through the National Residency Matching Program. Included are categorical (rotating and straight) residencies in anesthesiology, family medicine, medicine, neurology, obstetrics and gynecology, pathology, pediatrics, rehabilitation medicine and surgery. Resident and fellowship positions are available in the following specialty areas:

- Department of Anesthesiology: anesthesiology
- Department of Dentistry: oral surgery and general practice dentistry
- Department of Family Medicine: family medicine
- Department of Medicine: cardiology, dermatology, endocrinology, gastroenterology, infectious disease, internal medicine, nephrology and primary care
- Department of Neurology: neurology
- Department of Obstetrics and Gynecology: obstetrics and gynecology
- Department of Ophthalmology: ophthalmology
- Department of Pathology: clinical and anatomical pathology
- Department of Pediatrics: pediatrics and pediatric allergy
- Department of Psychiatry: psychiatry and child psychiatry
- Department of Radiation Oncology: radiation therapy
- Department of Radiology: radiology and nuclear medicine
- Department of Rehabilitation Medicine: rehabilitation medicine
- Department of Epidemiology and Preventive Medicine: preventive medicine
- Department of Surgery: general surgery, neurosurgery, orthopaedic surgery, otolaryngology, thoracic and cardiovascular surgery, urology

Appointments to residencies are made by the Chief Executive Officer of the hospital, upon the recommendation of the appropriate clinical department chairperson. Correspondence, applications and residency inquiries should be addressed to the chairperson of the respective department or program at: University of Maryland Medical System, 22 South Greene Street, Baltimore, Maryland 21201.

Program of Continuing Medical Education

The University of Maryland School of Medicine is concerned with three phases in the education of physicians: undergraduate, graduate and postgraduate or continuing medical education. Recognizing its responsibility to the people and physicians of Maryland, the medical school strives to make continuing medical education as meaningful and accessible to the state's physicians as possible. Such a commitment is fulfilled through the Program of Continuing Medical Education, administered by the Assistant Dean for Continuing Medical Education and a full-time staff, with the assistance of a faculty committee on continuing medical education. The programs offered are approved by the American Medical Association for credit in Category 1 (towards its Physician's Recognition Award) and by the Accreditation Council for Continuing Medical Education. Courses and other educational activities sponsored by this program can also be used by a physician to meet the Maryland requirements for relicensure.

Continuing education is essential for maintaining the skills and competence of the physician. All professions, but especially physicians, are called upon by society to continue to learn. The physician must rely upon continuing education programs to bring to his or her practice new medical knowledge as it becomes available. This is accomplished in a variety of ways including individualized continuing education (such as journal reading, audio cassettes, consultation and preceptorships); hospital-based continuing education (rounds, conferences and other formal presentations in the community hospital); and formal lectures, seminars and workshops.

Dedicated to this philosophy, the Program of Continuing Medical Education, in close cooperation with the departments and divisions of the School of Medicine, annually prepares a comprehensive program of continuing medical education activities to provide relevant and new information to Maryland physicians. To the greatest extent possible, the program is structured around the educational needs of practicing physicians. Both the type and content of the instructional programs, as well as their instructional design, are varied in order to satisfy the learning needs of as many physicians as possible. A special effort is made to provide learning situations in the local hospital and other health care settings where the physician practices daily.

Through the Visiting Professor Program, the medical school provides continuing education opportunities in community hospitals where they are convenient and accessible to the practicing physician. These programs are often developed in response to the hospitals' medical care audit activities. In addition, a wide variety of one- to three-day symposia are presented on general and subspecialty topics of current interest. Other educational opportunities are also offered on the medical center campus and range from weekly grand rounds in the various major disciplines to special evening refresher courses.

Another important program provides practicing physicians the opportunity to return to the medical center as a trainee. Through the Visiting Practitioner Program, physicians enter an individualized refresher course of graduate training for a limited period of time varying from one to several weeks.

Additionally, close cooperation with the Office of Medical Education makes the extensive audiovisual resources of the medical school available for use in continuing medical education programs, both on and off campus. The Office of Medical Education also provides for a lending library of audiovisual and other materials which can be used in individualized continuing education by practitioners throughout the state. Contact is also maintained with the other providers of continuing medical education within Maryland in an effort to coordinate continuing medical education activities for the state's practitioners.

Anatomy

Professor and Chairman
Lloyd Guth, MD
Professor
E. C. B. Hall-Craggs, MD, PhD
Marshall L. Rennels, PhD
Judy M. Strum, PhD
Adjunct Professor
George R. Martin, PhD
Associate Professor
Larry D. Anderson, PhD
Charles P. Barrett, PhD
Edward J. Donati, PhD
Anne N. Hirshfield, PhD
George J. Markelonis, PhD
Karl F. Mech, Sr., MD
Tae H. Oh, PhD
David W. Pumplin, PhD
Paul J. Reier, PhD
Frances P. Schulter-Ellis, PhD
Charles R. Shear, PhD
Assistant Professor
Barbara S. Bregman, PhD
Adjunct Assistant Professor
John P. Petrali, PhD
Research Associate
Dennis J. Hoover, PhD

The Department of Anatomy provides instruction in the various anatomical sciences. Courses are offered to medical and graduate students working toward an MS or PhD degree. The primary educational goal of the department is to provide a basic understanding of the structure of the human body as related to function. Where relevant, important clinical and research applications of the material under study are described. The study of human structure includes all levels from gross morphology seen in the dissecting room to the fine structure as revealed with the electron microscope. Special emphasis is placed on the study of neuroscience where neuroanatomy is taught in an integrated format with neurophysiology, neurochemistry, neurobiology and clinical neurology.

A knowledge of anatomy is essential to the proper understanding of clinical practice. Since anatomy is a broad and relatively precise discipline, there is a heavy demand upon each student's study time. Accordingly, the courses are designed to help students with their own learning process as well as to provide a comprehensive treatment of the subject including both theoretical lectures and practical laboratory assignments.

Research Interests

The faculty of the Department of Anatomy are actively engaged in research on several fundamental aspects of cell biology. Projects on spinal cord regeneration, neuronal transplantation, innervation of cerebral blood vessels, and factors controlling sprouting of peripheral nerve fibers are representative of departmental interests in neurobiology. Studies of muscle biology focus upon problems in skeletal muscle regeneration and trophic influences of nerves on muscle. The other departmental interests include studies on the regulation of ovarian function, hormonal influences on normal, precancerous and cancerous tissues, and genetic regulation of cell differentiation and on organogenesis in the central nervous system.

Undergraduate Medical Program

First Year

MANA 505. Genetics. Designed primarily for nursing students, this course emphasizes basic principles of human and medical genetics with attention given to underlying mechanisms of genetic disorders of man. Other areas developed are congenital malformations, developmental genetics, probability and genetic counseling.

MANA 511. Anatomy of the Human Body. A comprehensive understanding of the morphology of the human body is provided. The basic concepts of structure as related to function are described in lectures and demonstrations. Laboratory facilities are provided for dissection of the human body and for the study of osteology and prosected material. The course includes instruction in living anatomy, roentgen anatomy and clinical correlation. (Dr. Hall-Craggs and Staff)

MANA 512. Histology and Cell Biology. Students will acquire a basic knowledge and understanding of the microscopic structure of the human body including developmental anatomy and all fine structure. The interdependence between structure and function in the different tissues and organs of the body is emphasized. Clinical and research applications of the course material are also stressed. Histological slides are provided for laboratory study and special lectures are given on functional ultrastructure. (Dr. Guth and Staff)

MANA 513. Neurological Sciences. This course provides an integrated study of neuroanatomy, neurophysiology and neurology. The structure and function of the central nervous system are presented simultaneously. Facilities are provided for dissection of the human brain, examination of stained microscopic sections of various levels of the brain stem, and laboratory experience involving the study of functional aspects of the nervous system. (Dr. Rennels and Staff)

MANA 514. Genetics. This is a series of one-hour lectures which include a basic consideration of the principles of genetics, population genetics, biochemical genetics, radiation genetics, immunogenetics and microbial genetics. Special emphasis is placed on the role of genetics in health and disease. (Dr. Sigman)

Electives. Gross Anatomy and a number of special electives are available to clinical and preclinical students. These are listed in the graduate school and medical school elective catalogs.

Anesthesiology

Professor and Chairman
Martin Helrich, MD

Medical School Professor
Beatrice L. Selvin, MD

Adjunct Professor
William H. Dornette, MD
Samuel I. Joseph, MD, PhD

Associate Professor
Colin F. Mackenzie, MD, ChB
M. Jane Matjasko-Chiu, MD
Baekhyo Shin, MD

Medical School Associate Professor
Brian H. Hoff, MD

Assistant Professor
Michael N. Ashman, MD
Jawad V. Hasnain, MD
Murray A. Kalish, MD
Arthur V. Milholland, MD, PhD
Lucille A. Mostello, MD
Mario L. Penafiel, MD

Medical School Assistant Professor
Susan M. Cohen, MD
Romeo S. DelRosario, MD
Gwynne L. Horwits, MD
Mahmood Jaberi, MD
John K. Stene, Jr., MD, PhD

Clinical Assistant Professor
Sheppard Kaplow, MD
Melvin L. Keller, MD
George Kushner, Jr., MD
Stephen O. Laucks, MD
Michael Liteanu, MD
Merrill E. Parelhoff, MD
James R. Smolko, MD

Research Assistant Professor
Junzo Takeda, MD

Visiting Assistant Professor
Mark Harris, MD

Instructor

Toa Chaw, MD
Frank D. McCormack, MD
Victoria W. Smoot, MD
Eileen K. Steinberger, MD
Gary J. Waxman, MD

Clinical Instructor

Selim H. Elzayat, MD, PhD
Sukhwant Sidhu, MD

As part of the sophomore course given by the Department of Pharmacology and Experimental Therapeutics, a discussion group elective "Clinical Practice in Anesthesiology" is offered to present the core curriculum of the specialty.

In addition, during the first two years the department participates in lectures, conferences and laboratory exercises of various preclinical departments. Such participation is intended to illustrate the application of basic science principles to the clinical practice of anesthesiology. Emphasis is placed on the physiologic and pharmacologic basis for preanesthetic medication, choice of anesthesia and the management of patients before, during and after surgery.

Electives of varying orientation and complexity are provided during the clinical years. These include clinical anesthesiology, obstetrical anesthesia, neuroanesthesia and critical care medicine. Further information and details concerning the elective courses may be found in the electives catalog or by contacting the department chairman.

Research Interests

Research is related to cardiorespiratory functions and includes studies of the effects of air embolism on expired N_2 analysis during bolus and infusion VAE and the effects of CPR on large bolus VAE analyzed with the gamma camera and radioisotopes. High frequency ventilation is under study to determine the differences between high frequency oscillation and the flow interrupter in comparison to conventional mechanical ventilation. The differences in washout of radioisotopes from occluded segments of lung are compared to washout with conventional ventilation. In addition, the effects of high frequency ventilation and liver blood flow have been determined.

Animal models of lung contusion and atelectasis have been developed. There are ongoing studies to determine the effects of side-to-side turning versus chest physiotherapy with postural drainage. High doses of steroids are being compared to placebo in the management of lung contusion. We presently have a Visiting Research Assistant Professor from Japan, seven faculty members and two resident anesthesiologists actively participating in laboratory studies. We can accommodate up to three medical students during the summer and provide experience in instrumentation and anesthesia for laboratory animals that will include many of the interventions and measurements of cardiorespiratory function used in clinical practice. They would join ongoing research projects and assist with data collation and analysis.

Biological Chemistry

Professor and Chairman

Giuseppe Inesi, MD

Professor

Lindsay W. Black, PhD
Enrico Bucci, MD, PhD
Leonard H. Frank, PhD
Mary E. Kirtley, PhD
Joseph Lakowicz, PhD
Stephen R. Max, PhD
Seymour H. Pomerantz, PhD
Barry P. Rosen, PhD
Adil E. Shamoo, PhD
J. Tyson Tildon, PhD
Charles J. Waechter, PhD

Research Associate Professor

Clara F. Bucci, PhD

Assistant Professor

Subhasis B. Biswas, PhD
A-lien L. Chang, PhD
Donald L. Gill, PhD
Terrence B. Rogers, PhD
Paul B. Wolfe, PhD

Research Assistant Professor
Peter I. Gutierrez, PhD
Badri Maliwal, PhD
Authur L. Zachary, PhD
Research Associate
Marwan Al-Shawi, PhD
James Bishop, PhD
Clare Biswas, PhD
Miguel Borbolla, PhD
Jorge DeAncos, PhD
Preeti A. Gangola, PhD
Hou-Shu Houng, PhD
Danuta Kosk-Kosicka, PhD
B. Venigalla Rao, PhD
Michael San Francisco, PhD
Malka Scher, PhD
Gregory Staub, PhD
Carlotta Sumbilla, PhD
Teruko Ueda, PhD
Ulrich Weigel, PhD

Biochemistry seeks to understand the phenomena of biology in terms of molecular structure and interaction. It permeates all of biology and medicine and is a fundamental prerequisite to other medical sciences, particularly pharmacology, microbiology and pathology; and the clinical sciences.

It is a teaching goal of the department to present a concise but comprehensive lecture-conference course including as major subjects: proteins, enzymes, nucleic acids, intermediary metabolism of major food stuffs, energy production and utilization, chemical aspects of hormones, protein and nucleic acid biosynthesis and biochemical genetics. In addition, the introductory medical course includes a systematic series of sessions organized with the Department of Medicine which demonstrate the application of biochemistry to the understanding of human metabolic disorders.

Because some entering students have had a reasonably thorough exposure to biochemistry, the department offers a place-out examination during the first week of the freshman year.

In connection with the elective program embodied in the revised curriculum, a number of special seminar-conference topics are offered in both the January and June electives period. Details and descriptions of course offerings can be found in the electives catalog. Additionally, students with special interests in biochemical investigation are encouraged to ask faculty members about opportunities for part-time or summer research. Limited funds have been available to support part-time research assistants from the medical classes.

The department also offers a doctoral program and a series of advanced courses (see Graduate School Catalog).

Research Interests

Research interests within the Department of Biochemistry are numerous and include studies in metabolism and enzymology (both mammalian and microbial), transport and membrane biochemistry, enzymology and fluorescence spectroscopy. Other research interests within the department focus upon collagen structure and metabolism, hemoglobin biochemistry, genetics and morphogenesis of viruses, regulation and synthesis of glycoproteins, and metabolism of nucleic acids.

Undergraduate Medical Program

First Year

MBIC 600. Biochemistry. An introduction to the later preclinical and clinical subjects, this course, presented in the first semester, is oriented toward mammalian metabolism and enzymology and those aspects of general biochemistry common to all organisms. A separate, but closely related course, correlative medicine, brings clinical correlation to the biochemical material in a series of weekly presentations of scientific clinical lectures, sometimes centering around a patient. (Staff)

Fourth Year

MBIC 548. Research Elective. Students are offered the opportunity to work with various faculty members in the following areas: 1) mechanism of ion transport; 2) hormonal regulations of receptor function; 3) calcium regulation in the cardiovascular system; 4) brain

receptors; 5) membrane structure and function in mammalian and microbial systems; 6) membrane glycoprotein and phospholipid biosynthesis; 7) amino acid metabolism, collagen structure and metabolism, and amino acid racemases and epimerases; 8) biochemistry and genetics of virus development and assembly, as well as regulation of development; 9) physical chemistry and chemistry of proteins; 10) microbial metabolism and physiology, as well as membrane transport of amino acids; 11) regulation of enzyme action by allosteric interactions; and 12) fluorescence spectroscopy. (Staff)

Biophysics

Professor and Chairman
Lorin J. Mullins, PhD

Professor
Lawrence Goldman, PhD
Hugo Gonzalez-Serratos, MD, PhD
Raymond A. Sjodin, PhD

Adjunct Professor
F. J. Brinley, Jr., MD, PhD

Associate Professor
Albert Hybl, PhD

Assistant Professor
Robert J. French, PhD

Research Assistant Professor
Teresa Tiffert, MD

Research Associate
Abdelaziz Mohamed, MD, PhD
Alicia Ortega-Aguilar, PhD
Juan Valle, PhD
Jose Whittembury, PhD

The Department of Biophysics strives to provide medical students with a background in the physicochemical principles necessary for the understanding of physiology and the neurosciences. The department also offers a program of graduate study leading to the PhD degree. Study programs are flexible and depend upon the preparation and interest of the student. Arrangements for a combined MD/PhD program are available on an individual basis.

Information regarding requirements, graduate courses offered, and research interests of the staff are available from the department, 660 West Redwood Street, Baltimore, Maryland 21201. Deadline for graduate applications is March 1.

Undergraduate Medical Program

First Year

MBPH 510. Principles of Biophysics. Given in cooperation with the Department of Physiology, this course is required of medical students. It is comprised of an introduction to cell physiology with special emphasis on osmotic and electrolyte balance in cells, the processes underlying the generation of the membrane potential, the mechanisms involved in electrical excitation of nerve, the transfer of excitation across synapses, and the mechanism of muscle contraction. (Staff)

Electives open to First, Second and Fourth Year Students

MBPH 511. Topics in Membrane Biophysics Elective. This course covers the following: 1) fundamentals of membrane permeability and transport; 2) enzymatic basis for active transport; 3) nerve excitation and conduction (cable properties and biophysical analysis); 4) muscle contraction and excitation-contraction coupling; and 5) selected topics of possible clinical significance. (Dr. Sjodin)

MBPH 512. The Application of Computers to Medicine Elective. Students are introduced to the uses of computers in the biosciences and medicine. Each student will have an opportunity to acquire experience using a terminal to interact with a computer. An introduction to the techniques needed to undertake digital simulation of physiological processes, statistical analysis, plotting and FORTRAN programming will be presented. (Dr. Hybl)

Diagnostic Radiology

Professor and Chairman
Joseph Whitley, MD

Professor
John M. Dennis, MD
John N. Diaconis, MD
Gerald S. Johnston, MD
Krishna C. V. G. Rao, MD
Nancy O. Whitley, MD

Adjunct Professor
Franklin L. Angell MD
Martin W. Donner, MD
Stanford M. Goldman, MD
Stanley S. Siegelman, MD

Associate Professor
Phillip J. Haney, MD

Medical School Associate Professor
Edward U. Buddemeyer, ScD
Morgan G. Dunne, MD
Erlinda S. McCrea, MD
S. Osher Pais, MD

Adjunct Associate Professor
Matthew T. Freedman, MD
James E. Bell, MD

Assistant Professor
Noel Chiantella, MD
Foud E. Gellad, MD
Richard H. Haar, MD
Bijan Keramati, MD
Richard C. Rosenbaum, MD
Jeremy W. R. Young, MD

Medical School Assistant Professor
Ole Ottesen, MD

Adjunct Assistant Professor
Robert E. Dinker, MD
Lee Goodman, MD
John B. Hyman, MD
Prasarn Nilprabhassorn, MD
William N. Thomas, MD
William H. Wallop, MD
Charles I. Weiner, MD

Instructor
John Brewer, MD
Jesse Dawkins, MD
Irene Kostrubiak, MD
Stuart Mirvis, MD

Adjunct Instructor
Samuel M. Andelman, MD
Charles J. E. Arnold, MD
Fred C. Ashman, MD
Sheldon B. Bearman, MD
Mark E. Bohlman, MD
Niel J. Borrelli, MD
J. Stephen Cunat, MD
Christopher J. Feifarek, MD
Harry C. Knipp, MD
Binal Lakhanpal, MD
Warren D. McNeely, MD
Lyle T. Saylor, MD
Michael Sherman, MD
Gurmeet S. Sidhu, MD
George Silverton, MD
Larry A. Snyder, MD
Nathan Stofberg, MD
Frank G. Twardzik, MD
Allan P. Weksberg, MD

Since German physicist Wilhelm Conrad Roentgen discovered the x-ray in 1895, its use has been greatly expanded in our society. The greatest advances have been in medicine where radiography now makes or verifies the diagnosis in three out of four cases of organic disease. With the advent of angiography, nuclear medicine, ultrasonography and computer generated tomography (CT) imaging is playing an even more extended role in diagnosis and selected therapeutic procedures.

Research Interests

Basic science research in the Department of Diagnostic Radiology focuses upon the construction of a CT algorithm which, through post processing of images integrating EKG timing, projects a visualization of the internal structure of the heart in motion. There is also a parallel effort in devising a specialized digital subtraction fluoroscopy algorithm and unit to improve the visualization of the coronary and cardiac chambers with smaller doses of intravascularly

injected contrast medium. Both projects are interdepartmental efforts which involve Diagnostic Radiology and Adult and Pediatric Cardiology.

The clinical research in this department focuses upon two long-term projects. Together with physicians in Gynecologic Oncology and the University of Maryland Cancer Center, the department is working to establish the accuracy and limits of computed tomography in staging gynecologic malignancies and lymphoma. Another project, involving MIEMSS physicians, is an investigation of the usefulness of CT and ultrasound in the diagnosis of multiple visceral trauma and its complications.

Undergraduate Medical Program

The Department of Diagnostic Radiology offers the medical student an opportunity to acquire a broad base of knowledge touching on almost all aspects of medicine. The required curriculum begins with Radiologic Anatomy taught in conjunction with Gross Anatomy (MANA 511) in the first year. This portion of the curriculum consists of lecture demonstrations and a slide-tape series, "Introduction to Radiographic Anatomy." Formal instruction is continued in the third year with the course RADI 540. The required curriculum is supplemented with informal case discussions with the staff and contact through interdepartmental rounds and conferences involving Diagnostic Radiology while the student is on other clinical rotations at the University of Maryland Medical System.

Third Year

RADI 540. Basic Radiology. Groups of students are assigned for a period of three weeks to the Department of Diagnostic Radiology. The group is subdivided to allow individual instruction as the student rotates through brief observation periods in selected subspecialties within the department. Students also receive an introduction to the Department of Therapeutic Radiology. Reading assignments, small group slide-tape exercises, a student teaching file and lectures form the core of the learning experience. Students attend departmental conferences and some of the joint conferences with other departments. An objective final examination is included in the course. (Dr. J. Whitley)

Photo by Don Carstens

Third and Fourth Year

Diagnostic Radiology Elective. Students learn more about properly using diagnostic imaging and interpreting images. The precise curriculum is flexible and tailored to the needs of the student's career choice. Students are expected to investigate some small aspect of imaging within their area of interest and make a 20-minute presentation to the faculty and residents. This presentation and overall performance, as evaluated by the curriculum supervisor, serve as the evaluation criteria for this elective. RADI 540 is a prerequisite. (Dr. J. Whitley)

Graduate Program

A four-year residency is offered in diagnostic radiology at the University of Maryland Medical System. Fellowships are offered in computed body tomography/ultrasonography, interventional and vascular radiology, neuroradiology and nuclear radiology.

Epidemiology and Preventive Medicine

Professor and Chairman
Irving I. Kessler, MD, MPH, DrPH

Professor
George Entwisle, MD
Charlotte Ferencz, MD, MPH
J. Richard Hebel, PhD
Christian R. Klimt, MD, DrPH
Mary M. Sexton, PhD
Roger W. Sherwin, MB, BChir
Majorie P. Wilson, MD

Research Professor
Paul L. Canner, PhD
Genell L. Knatterud, PhD

Adjunct Professor
Peter V. V. Hamill, MD, DrPH
Alan L. Sorkin, PhD
Matthew Tayback, ScD

Associate Professor
Robert E. Black, MD, MPH
Myron M. Levine, MD, DTPH
Lulian W. Reed, MD
James H. Tenney, MD
John W. Warren, MD
P. David Wilson, PhD

Medical School Associate Professor
Marshall S. Levine, MD, MPH

Clinical Associate Professor
James P. G. Flynn, MD, MPH
David R. Nalin, MD

Research Associate Professor
William E. Woodward, MD

Adjunct Associate Professor
Max Eisenberg, PhD
Genevieve M. Matanoski, MD, DrPH

Assistant Professor
Joanne A. Boughman, PhD
Marian R. Fisher, PhD
Norma Lynn Fox, PhD
Helen R. Kohler, PhD
Jay Magaziner, PhD
Robert J. McCarter, ScD
John G. Morris, MD
Suzanne T. Orr, PhD
Jeffery Sobal, PhD
Bruce W. Thompson, PhD

Medical School Assistant Professor
Brigita Krompholz, MD, MPH

Clinical Assistant Professor
Mary Lou Clements, MD
Noel D. List, MD, MPH
Judith D. Rubin, MD, MPH

Research Assistant Professor
Patricia C. Dischinger, PhD
Nancy H. Doub, PhD
Susan H. Fischman, DrPH
Thomas J. Kulle, PhD
Kiyohiko Mabuchi, MD, DrPH
Mark A. Moody, PhD
Suzanne S. Murphy, MS
Elaine Romberg, PhD
Michael L. Terrin, MD

Adjunct Assistant Professor
Susan P. Baker, MPH
Kenneth Berger, MD, PhD
Margaret W. Bridwell, MD
John B. DeHoff, MD, MPH
Paul East, MD, MPH, LLM
Katherine P. Farrell, MD
David Glasser, MD, MPH
Willard L. Graves, PhD
Leon Kassel, MD
John L. Pitts, MD, MPH
Peter Warschawski, PhD
James G. Zimmerly, MD, MPH, LLB

Instructor
Gerard J. Prud'Homme, MA

Associate
Quely de Barros, MS
Peter P. Lamy, PhD
Beth M. Wescott, MLS

Clinical Associate
Jutta D. Heiner, MD

Research Associate
Barbara E. Crawley, MD
Sandra Forman, MD
James F. Gardner, ScM
Mary H. Leder, MPH, MS
Cynthia Maier, MS
Constance McDonnel, MMH
Ruth E. Parry, MA

Barbara L. Scanlon, MA
Barbara C. Schumann, MA
Jean Scott, MPH
Nittaya Suppapanya, MS
Michael K. Yuhas, MA

Adjunct Research Associate

Stephen L. Forstenzer, MS

Modern epidemiology is a relatively new biomedical discipline at the interface of clinical practice and basic medical science. The clinical arena within which epidemiologists work is termed preventive medicine. The effective practice of epidemiology and preventive medicine requires a comprehensive knowledge of clinical medicine and basic medical science, as well as of experimental methodology, biostatistics and the social sciences.

The department is engaged in teaching, research and service across the spectrum of public health and preventive medicine. Programs in gerontology, environmental and occupational health, chronic and infectious disease epidemiology, biostatistics, health services administration and evaluation, maternal and child health and behavior science offer courses, seminars, journal clubs, clinical assignments and supervised research experiences designed to enhance the physician's capabilities in these areas of increasing public concern.

The department's Division of Clinical Investigation is a nationally recognized center for the design, conduct and analysis of controlled clinical trials. The Maryland Cancer Registry, a computerized statewide system for registering cancer cases, was developed and is operated by the department for the Maryland Department of Health and Mental Hygiene. The Preventive Cardiology Clinic, the health promotion program and interdisciplinary programs with the Division of Geographical Medicine in infectious diseases and with the University of Maryland Cancer Center in cancer are additional resources of possible interest to students.

Required courses in biostatistics, epidemiology, occupational health, organizational aspects of medicine and clinical preventive medicine are offered in the first, second and fourth years of the curriculum. A variety of special courses, tutorials and research experiences may be elected by medical students during their elective periods. Students are also invited to attend departmental seminars, resident seminars and journal clubs which are scheduled each week throughout the academic year. Summer fellowships, in which students engage in epidemiological projects under faculty supervision and participate in departmental seminars and workshops, are available on a competitive basis.

An approved two- or three-year residency leading to certification in general preventive medicine is offered to clinically qualified applicants. The program is designed to satisfy a wide variety of career aspirations for positions in federal health agencies, state health departments, hospitals, medical schools, public health institutes, industry and private practice of clinical preventive medicine.

The community service activities of the department are carried out through active collaboration in health planning, research and evaluation with agencies and institutions concerned with health problems throughout the region. These include hospitals, clinics, health departments, the Baltimore City and Maryland medical societies and a variety of other federal and voluntary organizations.

Research Interests

Research activities within the department encompass a broad range of interests. Cardiovascular diseases, particularly coronary heart disease and hypertension, are a major focus of attention. Cancer investigations include studies on the etiology of specific neoplasms, analysis of time trends, and development of computerized clinical information management systems. Environmental risk factors in congenital heart disease and other birth defects are an important area of departmental research. The epidemiology of diabetes mellitus and relationships between maternal diabetes mellitus and adverse health outcomes in the offspring

are also under investigation. A variety of research projects in occupational health, ranging from studies on the inhibition of monocyte esterase in plastic workers to medical monitoring of asbestos-exposed workers are underway. Studies on a number of gerontological topics have been undertaken, including hip fractures among the elderly and problems of the aged living alone.

Hospital and health services are subjects of increasing interest to departmental faculty, with studies on patterns of utilization at the University of Maryland Medical System and other metropolitan Baltimore institutions recently completed. Health behavior modification is a major area of departmental activity, with new findings on the effect of smoking during pregnancy on the offspring recently published. UniHealth, the department's health promotion program, is developing computerized health risk appraisal instruments as well as specific health behavior modification regimens for use by employees of industry and the public sector. Clinical trials of drug efficacy in cardiovascular disease, diabetes and cancer are also underway.

Changing patterns in medical education, improving the quality of care for mothers with dependent children, tropical and infectious diseases and preventive cardiology are other areas of research interest to the department. The department's Health Data Management Center is a major resource for the design, conduct and analysis of epidemiology-based studies.

Undergraduate Medical Program

First Year

PREV 520. Biostatistics for the Physician. *Second Semester:* This course is designed to enable the student to evaluate clinical and research findings published in the medical literature. Topics include: probability, probability distributions, descriptive statistics, sampling, significance testing and correlation. Small group sessions with emphasis on problem solving. (Dr. Hebel and Staff)

*Second Year**

PREV 500. Epidemiology for the Physician. *Second Semester:* The distribution patterns, natural history, risk factors, and methods for control of selected diseases of public health importance are presented. Topics include a variety of chronic, infectious and genetically inherited diseases. Small group sessions. (Dr. Berger and Staff)

PREV 540. Organizational Aspects of the Health Care System. *Second Semester:* A short course emphasizing the use of epidemiological methods in analyzing relationships between social and organizatonal factors and health status. Structural components of the health care system, alternatve modes of health care delivery, utilization of health care services and referral patterns are discussed. Small group sessions. (Dr. Sexton and Staff)

PREV 560. Occupational and Environmental Medicine. *Second Semester:* A short course offering an introduction to disease in the occupatonal and environmental setting, including techniques for taking occupational histories. Small group sessions. (Dr. Levine and Staff)

**A single grade is awarded for PREV 500, 540 and 560.*

Fourth Year

PREV 544. Preventive Medicine in Clinical Practice. A course offered to all senior medical students in rotation, dealing with applications of preventive medicine in the clinical practice setting. Significant causes of morbidity and mortality during each of the life epochs from prenatal through old age are discussed. Emphasis is upon the role of the practitioner in primary and secondary prevention of disease. Other sessions are devoted to occupational health, economic issues, medicolegal problems and medical ethics. Small group sessions. (Drs. Rubin and Sherwin)

Electives. A variety of elective opportunities are available for medical students. These include tutorials with selected faculty members, supervised research experiences and courses which are offered longitudinally throughout the year or during the minimesters. Among currently offered courses are the following: PREV 503 Birth Defects (Dr. Ferencz); PREV 525 Medical Biostatistics: Assessing Information (Dr. Hebel); PREV 526 Introduction to Computing (Dr. McCarter); PREV 543 Economics of Health Care (Dr. Sorkin); PREV 571 Parent/Child/Physician Interaction (Dr. Sexton).

Fellowships and Honors Programs

Summer fellowships and honors programs in preventive medicine are available to a limited number of students. Working closely with a faculty member, each undertakes a research project in gerontology, occupational medicine, health behavior modification, health services evaluation, biostatistics, computer applications to biodata or some other aspect of preventive medicine, public health or epidemiology. Fellows also participate in departmental seminars, journal clubs and workshops which provide additional opportunities for interaction with faculty members, preventive medicine residents and other students. Elective credit is given to those satisfying the requirements of the program.

The Robley Dunglison Prize for excellence in Preventive Medicine is presented at precommencement to an outstanding senior student.

Graduate and Postgraduate Programs

The Department of Epidemiology and Preventive Medicine offers a two- or three-year residency program in general preventive medicine which is approved by the American Board of Preventive Medicine. This provides a variety of opportunities for advanced study and practice in epidemiology, biostatistics, computer science, health care administration, gerontology and occupational health, among other preventive medicine disciplines.

Components of the residency program include required and elective graduate-level courses, a variety of seminars, journal clubs and workshops, supervised research experiences and field placement in public health or research settings.

Combined residency programs may be arranged for qualified applicants in cooperation with the departments of Internal Medicine, Pediatrics, Family Medicine, Rehabilitation Medicine and other clinical departments. These enable the resident to become Board-eligible in both preventive medicine and the clinical specialty.

The department's Graduate Program in Preventive Medicine, offers MS and PhD degrees. A conjoint program leading to the award of both MD and MS in Preventive Medicine degrees at the end of four or five years of study is also available to medical students. The fifth year qualifies as a year of residency credit approved by the American Board of Preventive Medicine.

Family Medicine

Professor and Chairman
Edward J. Kowalewski, MD
Associate Professor
C. Earl Hill, MD
School Associate Professor
John M. Hoopes, MD
Herbert L. Muncie, MD
Charles Whitfield, MD
Clinical Associate Professor
Emidio Bianco, MD
J. Roy Guyther, MD
Julian W. Reed, MD
Assistant Professor
Alan M. Adelman, MD
Victor V. Cheloliber, MD, PhD
Frank R. Claudy, MD
John E. Davis, PhD
Mitchell A. Kaminski, MD
Norma Poulsen, MD
Sallie Rixey, MD
Jeffrey Sobal, PhD
George A. Taler, MD
School Assistant Professor
Burton H. Kaplan, MD
John P. Krick, MSW
Clinical Assistant Professor
Jose M. Albornoz-Ruiz, MD
Alva S. Baker, MD
Bruce A. Blumenthal, MD
Lorraine M. Dailey, MD
Alfred J. Daniels, MD
Michael V. Edelstein, MD
James R. Evans, MD
Eugene Guazzo, MD
Howard M. Klein, MD
David H. Looff, MD
Christine Marino, MD
Victor S. Roth, MD
Anthony Vazzano, MD
Daniel I. Welliver, MD
James S. Wright, MD
Jared B. Zelman, MD
Instructor
Christine Hernandez, MD
David C. Miller, MD
Clinical Instructor
Walter J. Alt, MD
Damian E. Birchess, MD
Jonathan P. Forman, MD
Thomas G. Johnson, MD
Lawrence I. Silverberg, DO
Joseph W. Zebley, III, MD

The Department of Family Medicine educates and trains family physicians who are capable of rendering high quality medical care and service to individual patients and families in a continuous and comprehensive manner. The family physician has total responsibility for patient care at the point of entry into the health care system and acts as coordinator of health care at secondary, tertiary and long-term care phases of illness.

The department offers family medicine educational experiences for students in a model family practice setting, on the in-patient service, and through an interdisciplinary longitudinal system of career planning which is guided by a full-time staff of experienced family physicians. Further, students are afforded the opportunity to participate in community health services and supervised practice experiences, and to engage in basic health care research.

Within the scope of its activities, several areas are emphasized. The department has a Division of Geriatrics and is a national leader in geriatric education. It was the first (1974) specifically dedicated Division of Geriatrics on this campus. Multiple programs, both departmental and interdisciplinary, are in place or being formulated. The Robert Wood Johnson Foundation has awarded this program a long-term grant for the development of an innovative health care system for the elderly. The scope of this division's educational research, and patient care efforts include the pre-elderly well individual and—at the other extreme—the chronically incapacitated aged patient. Expansion of facilities to accomplish the above are in pro-

gress. Faculty development is a major departmental effort. Courses and workshops in "teaching skills" are offered to postdoctoral and predoctoral students as well.

Research Interests

The research efforts of the Department of Family Medicine reflect the broad interests of the department's faculty. The current projects, which are clinically oriented and relate to current medical problems, range from the epidemiologic studies to evaluations of specific therapies. The department has a strong interest in nutrition, as it relates to the family, the elderly and especially nutritional supplements. It has interest as well in health promotion and collaborates with other departments to investigate methods of health promotion. Other collaborative efforts involve infections in the elderly, nutritional status during pregnancy, and the use of the flexible sigmoidoscope. All of the Family Medicine residents, during their last year are required to complete a research project and present their results at the Annual Research Day. The department is involved in presentations of their research at national meetings, as well as the dissemination of that information through publications.

Undergraduate Medical Program

Longitudinal Elective. Introduced into the curriculum in 1976, this elective permits the student interested in family medicine to decide on and gain knowledge toward that career objective. Included in this offering are interesting field trips, seminars, panel discussions and preceptorship experiences. Topics include historical medical perspectives; the economics of medicine; the humane approach to patient care; interrelationships between patient, family, community and physician/medical profession, to name a few. (Dr. Rixey)

Minimester Electives. During the months of January (not available to freshman students in January) and June, students may elect to spend time in the office of a selected family physician in order to gain knowledge of the health care system at that level. In this setting, the student may opt for patient care participation and/or engage in some health care research in that ambulatory population. (Dr. Rixey)

Family Practice Preceptorships. This elective enables the student to gain insight into the life style of a family physician in a community practice setting and further demonstrates what family practice involves. Here the student has the opportunity to see the scope of the work of the family physician and to participate with the family physician as he or she encounters and manages the diverse problems seen in a busy family practice. The student has the unique opportunity to understand each patient in relationship to family, job, and total environment. Additionally, it permits the student to understand the physician's place in society, social and civic obligations and responsibility to patients. This elective is available for four- or six-week periods, usually during the summer. (Dr. Guyther)

Senior Elective in Family Practice. Students will spend much of their time caring for families in the offices of family physicians in the community. They will have the opportunity to manage, under supervision, a multiplicity of problems typical of a busy family-oriented group practice. Other medical professionals are available for consultation and there is ample opportunity for coordinated, continuous care on a short-term basis. Didactic sessions are held at the university on various aspects of family medicine. Training in clinical alcoholism is also provided as a special feature of this rotation. (Dr. Rixey)

Senior Internship in Family Practice. The Department of Family Medicine offers an eight-week internship to senior students. This is an intensive in-patient experience utilizing the Family Medicine In-Patient Service. Variety is a major attraction as the cases range from newborn care and obstetrics to adult general medical cases. The student is exposed to the family practice approach to in-patient care with an emphasis on interdisciplinary, comprehensive and continuous care. The student will participate in night and weekend call. (Dr. Poulsen)

Graduate Program

The University of Maryland's approved three-year residency in Family Medicine is one of the oldest in the nation. Its goal is to provide a full breadth of training in the specialty utilizing the latest educational methods. There is adherence to the educational requirements as required by the Residency Review Committee in Family Practice of the Accreditation Council of Graduate Medical Education. Additionally, every effort is made to see that the curriculum and educational experiences are in accordance with the Residency Assistance Program Criteria for Excellence in Training. However, flexibility is maintained through the availability of electives in order to accommodate the specific needs of the trainee. Although the majority of graduates are actively engaged in Family Practice, a significant and growing number are pursuing an academic career. (Dr. Hill)

Continuing Education Programs

This phase of the Maryland program is based on the philosophy that the education of family physicians must be a continuum throughout their entire career. These programs prepare graduates to successfully pass each recertification examination as required by the American Board of Family Practice.

A variety of continuing education programs is offered, ranging from short didactic courses to extensive in-depth courses in system-oriented clinical subjects. Also offered are individually tailored courses to fulfill the specific needs of a physician. Information on current and projected courses is available at all times from the Department of Family Medicine or the Program for Continuing Medical Education. (Drs. Muncie and Rixey)

Internal Medicine

Professor and Chairman
John A. Kastor, MD

Professor Emeritus
Ephraim T. Lisansky, MD
Theodore E. Woodward, MD

Associate Professor Emeritus
Edward F. Cotter, MD

Professor
Joseph Aisner, MD
Mordecai P. Blaustein, MD
Joseph W. Burnett, MD
Frank M. Calia, MD
Thomas B. Connor, MD
Robert L. Evans, MD
Michael L. Fisher, MD
Jay S. Goodman, MD
Sheldon E. Greisman, MD
Bruce P. Hamilton, MB, ChB
Frank L. Iber, MD
Gerald S. Johnston, MD
Myron M. Levine, MD, DTPH
Morton I. Rapoport, MD
Joseph D. Sapira, MD
Leonard Scherlis, MD
Charles A. Schiffer, MD
Stephen C. Schimpff, MD
G. Thomas Strickland, MD, PhD
William D. Tigertt, MD
Colin Wood, MD

Clinical Professor

Eugene Bereston, MD
Joseph A. Mead, MD
Albert Shapiro, MD
Vernon M. Smith, MD

Research Professor

Nedd R. Frank, MD
Merril J. Snyder, PhD

Associate Professor

Mohamed S. Al-Ibrahim, MB, ChB
Sheldon Amsel, MD
Mark M. Applefeld, MD
Richard A. Baum, MD
Robert E. Black, MD, MPH
John S. Britten, MD
Ellis S. Caplan, MD
Nathan H. Carliner, MD
Mary Lou Clements, MD, MPH
R. Ben Dawson, MD
Sudhir K. Dutta, MD
Merril J. Egorin, MD
George Entwisle, MD
Thomas E. Hobbins, MD
James B. Kaper, PhD
Richard S. Kaplan, MD
Yu Chen Lee, MD
Paul D. Light, MD
Luis G. Martin, MD
Salah M. Nasrallah, MD
Robert W. Peters, MD
Gary D. Plotnick, MD
Emilio Ramos, MD
Elizabeth L. Rogers,MD
John H. Sadler, MD
Elijah Saunders, MD
Robert T. Singleton, MD
Harold C. Standiford, MD
James H. Tenney, MD
Joseph R. Testa, PhD
David A. Van Echo, MD
James C. Wade, MD
John Warren, MD

Clinical Associate Professor

Edward U. Buddemeyer, ScD
Paul D. Chang, MD
Jean-Jacques Gunning, MD
Felix P. Heald, MD
Victor R. Hrehorovich, MD
Rouben M. Jiji, MD
Herbert A. Kushner, MD
Samuel Morrison, MD
James A. Quinlan, Jr., MD
Howard F. Raskin, MD
Joan Raskin, MD
Julian W. Reed, MD
Edward Rusche, MD
Andrew G. Smith, PhD
Peter B. Terry, MD
Charles Whitfield, MD
Michael C. Yen, MD

Research Associate Professor

Gary J. Calton, MS, PhD
Howard T. Go, PhD
H. David Kerr, MD
Thomas J. Kulle, PhD
Marshall S. Levine, MD, MPH
Rabindra N. Pakniak, MD
William E. Woodward, MD

Assistant Professor

Howard Belzberg, MD
Alan T. Cariski, MD
Marie D. Chatham, MD
T. Austin Doyle, MD
George L. Drusano, MD
Peter Ebenstein, MD
Mario Eisenberger, MD
Steven A. Fischkoff, MD
Raymond H. Flores, MD
Milford M. Foxwell, MD
Ronald Geckler, MD
Joyce Y. Gross, MD
Daniel C. Hardesty, MD
Meyer R. Heyman, MD
David E. Johnson, MD
Rodney Johnson, MD
Jai H. Joshi, MD
John Josselson, MD
Patricia S. Latham, MD
Richard D. Leavitt, MD
Genevieve Losonsky, MD
Linda Lutz-Nagey, MD
James H. Mersey, MD
Marcia R. Moody, PhD
Marguerite T. Moran, MD
J. Glenn Morris, MD, MPH, TM
Douglas D. Ross, MD
David M. Saltzberg, MD
Marcia C. Schmidt, MD

Yu-Liang Shen, MD
Henry J. Silverman, MD
Brian M. Spar, MD
J. Lawrence Stafford, MD
Frederick J. Sutton, MD
Carl L. Tommaso, MD
Lawrence D. Weber, MD
Suzanne K. Wedel, MD
Matthew R. Weir, MD
Susan D. Wolfstal, MD

Clinical Assistant Professor

Aristides C. Alevizatos, MD
William C. Anthony, MD
Albert L. Antlitz, MD
Bruce E. Beacham, MD
Cyrus E. Beekey, Jr., MD
John W. Blotzer, MD
George M. Breza, MD
Cedric W. Bryan, MD
Nijole V. Carozza, MD
Issam E. Cheikh, MD
Miriam L. Cohen, MD
Michael E. Cox, MD
William B. Davidson, MD
Robert J. Davis, PharmD
Donald H. Dembo, MD
Anthony DeMunecas, MD
Charles Diggs, MD
Mouta Dilaimy, MD
Salvatore Donohue, MD
Renan J. Dureza, MD
Barry H. Epstein, MD
Bernard P. Farrell, MB, BCh
Victor R. Felipa, MD
Ira T. Fine, MD
Wilbur G. Fiscus, MD
Cynthia A. Forsthoff, MD
Carmen A. Fratto, MD
L. Michael Glick, MD
Neil D. Goldberg, MD
Ronald Goldner, MD
W. Michael Gould, MD
Darrell M. Gray, MD
Craig G. Haber, MD
Davis M. Hahn, MD
Robert A. Hartley, MD
Colen C. Heinritz, MD
Wally S. Hijab, MD
Gerald A. Hofkin, MD
Alfonzo H. Janoski, MD
Sandra Johnson, MD
Manjari Joshi, MD
Abdul M. Karim, MD
Michael H. Keleman, MD
Edward P. Koza, MD
Claudio F. Lanata, MD, MPH
George D. Lawrence, MD
Samuel Legum, MD
Philip A. Levin, MD
Paul D. Levinson, MD
Anthony A. Lewandowski, MD
J. Leonard Lichtenfeld, MD
Karen M. Lichtenfeld, MD
Noel D. List, MD, MPH
Martin M. Magram, MD
John P. Manzella, MD
Robert D. Mathieson, MD
Eugene V. Mazzocco, MD
John H. McConville, MD
Louis Miller, MD
Lawrence Mills, MD
Alan S. Moodie, MD
George W. Moran, MD

Stanley E. Morrison, MD
John H. Mulholland, MD
Ashok Narang, MD
Joseph D. Notarangelo, MD
Michael J. O'Connell, MD
Samuel I. O'Mansky, MD
Chris Papadopoulos, MD
Robert T. Parker, MD
Carolyn J. Pass, MD
Michael N. Peters, MD
David B. Posner, MD
Louis N. Randall, MD
William E. Randall, Jr., MD
Margaret B. Rennels, MD
Wallace A. Riley, MD
Thomas L. Sacks, MD
Charles S. Samorodin, MD
Jerry E. Seals, MD
Stephen D. Sears, MD, MPH
Arthur A. Serpick, MD
Bayinnah Shabbaz, MD
Mahin Shamszad, MD
Joseph Shear, MD
Emanuel H. Silverstein, MD
Bahram Sina, MD
Dennis Smith, MD
Roland T. Smoot, MD
Wayne C. Spiggle, MD
Ronald J. Sweren, MD
M. Eugene Tudino, MD
William A. Valente, MD
Dean L. Vassar, MD
M. William Voss, MD
Ko Pen Wang, MD
Larry J. Warner, MD
Richard B. Williams, MD
Irving D. Wolfe, MD
Celeste L. Woodward-Applefeld, MD
Stanley N. Yaffe, MD
Thomas M. Zizic, MD

Research Assistant Professor

Sharon L. Hansen, PhD
Harry L. Mobley, PhD
Avrom Pollak, PhD
Joel M. Teitelbaum, PhD
Barbara K. Urbaitis, PhD

Instructor

Regina H. Anderson, MD
Perry G. Austin, MD
Lawrence F. Awalt, MD
Stuart Bell, MD
Richard D. Biggs, MD
Ronald E. Bost, MD
William G. Brown, MD
Chi-Shiang Chen, MD
William A. Dear, MD
Park W. Espenshade, Jr., MD
Renato Espina, MD
Kendall R. Faulkner, MD
Catterine Ferreccio, MD, MPH
Vincent J. Fiocco, MD
Paul Gertler, MD
David Goldscher, MD
Luis Gonzales, MD
Louis E. Grenzer, MD
Michael O. Gum, PharmD
Linda Headrick, MD
Thomas P. Hughes, BS
Mohammad Inayatullah, MD
Stuart L. Jacobs, MD
Miguel Karacuschansky, MD
Bernard S. Karpers, Jr., MD
Barry K. Lance, MD
Manuel Levin, MD
Robert Levitt, MD
Gary A. Manko, MD
Scott T. Maurer, MD
James McPhillips, MD
John J. Messina, MD
Jeffrey G. Middleton, MD
Edward M. Miller, MD
Marc A. Mugmon, MD
Debra V. Naccarto, MS
James S. Novick, MD
Kemper Owens, MD

Frederick N. Pearson, MD
Roy H. Phillips, MD
Joseph Reilly, MD
Luis E. Rivera, MD
Bruce Rosenberg, MD
Gary B. Ruppert, MD
Edward W. Schaefer, Jr., MD
Jeffrey A. Schuldenfrei, MD
Ajaib S. Sidhu, MD
Jean M. Smith, MS
Dorothy A. Snow, MD
Richard Stephenson, MD
Michael B. Stewart, MD
John H. Stone, MD
Robert E. Stoner, MD
Ralph E. Updike, MD
Ralph Weber, MD
Barry J. Weckesser, MD
Thomas Wiser, PharmD
Benjamin Yorkoff, MD
Charles R. Young, BA

Associate

Leon Ashman, MD
Charles J. Blazek, MD
Francine D. Camitta, MD
Joseph Furnary, MD
V. Lopez-Majano, MD
Paul G. Mueller, MD
Michael F. Plott, MD
Ramon F. Roig, MD
Leo Samelson, MD
David M. Shearer, MD
Stanley Steinbach, MD
Wilfred H. Townshend, MD
Ralph Twining, MD

Research Associate

David G. Cargo, MS
Jennifer H. Hamilton, MB
Gregory J. Kuzbida, MA
James H. Millman, MD
Richard W. Pavlis, MA
Frank Shanty, PhD

Assistant

George M. Ramapuram, MD
Seymour H. Rubin, MD

Psychologist

John C. Rhead, PhD

This department's main objective is to teach the broad and specific principles of internal medicine to students and house staff through patient care and clinical research. To do this, patients are studied thoroughly using modern medical techniques in an environment conducive to learning. Each subspecialty group is expected to practice the general principles of medicine and perform specialized research. When indicated for the study of patients' problems, new and specialized diagnostic procedures are provided, such as catheterization, endoscopic and isotope procedures, and application of specialized biochemical, microbiological or immunological tests.

Attending physicians teach the practical aspects of taking a comprehensive medical history, performing a thorough physical examination and utilizing definitive techniques which are often performed by consultative subspecialty teams. Emphasis is placed on rendering care to ambulatory patients in the medical clinics and emergency room. In the hospital and clinic settings, patient care and proper protection of individual dignity are stressed.

Fellowships

Summer Fellowships. A certain number of the medical subspecialty divisions provide specialized training for students as fellows during the summer months. The applicant is encouraged to apply directly to the division head. These fellowships enable the student to become acquainted with the various specialized diagnostic and research techniques, the clinical problems and therapeutic regimens peculiar to each of the medical subspecialties. Summer fellowships are available in the following divisions: cardiology, dermatology, endocrinology, gastroenterology, hematology, oncology, nephrology, infectious diseases, clinical physiology, rheumatology and pulmonary diseases.

Interested applicants should contact the respective division head prior to January 1 of the year in which the fellowship is desired. In many instances, a fellowship award is made providing remuneration for two or three of the summer months.

Postgraduate Fellowships. These are available in the various specialties of medicine. For details, see the specific division.

Undergraduate Medical Program

Third Year

MEDC 530. Clinical Clerkship. This course consists of a clinical clerkship on the medical wards of the University of Maryland Medical System or the Baltimore Veterans Administration Hospital for a period of 12 weeks. Students are responsible, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases. They attend ward rounds and conferences in general medicine with the resident staff, attending physicians and chief of service. The clinical clerk is given instruction in the keeping of medical records including a modified problem-oriented record. The student participates in a daily audit of the medical record with the medical house staff which serves to provide more efficient hospital care.

Fourth Year

MEDC 541. Medical Clinic-Adult Ambulatory Medicine Elective. The students are offered two choices: 1) morning is spent in the adult medical clinic with responsibility for total patient care, and may spend the remainder of the day under the supervision of the medical admitting officer assisting the management of emergencies and urgent problems; or 2) morning is spent in the medical clinic and afternoon attending subspecialty clinic or clinics of his or her choice.

Students are assigned to the primary care clinics where they gain experience with ambulant patients and gain insight into the importance of medical records, techniques of medical audit and the role of allied health professionals (such as the nurse practitioners and the clinical pharmacists) in the delivery of health care.

MEDC 548-01. Student Internship in Medicine, University of Maryland Medical System. The senior medical clerkship provides an excellent opportunity for those students who are ready to assume direct responsibility for patient care. The students are expected to perform the complete history and physical examination, perform and interpret diagnostic tests, formulate and institute treatment plans, and conduct day-to-day follow-up of all patients admitted to them. The student will function as an integral member of the ward-team and gain experience in a variety of clinical settings. The work day begins at 8:00 a.m. with a 9:00 a.m. Medical Admissions Conference where new patients are presented to the chief resident. Ward rounds follow and during the day new admissions are worked up. Evening chart rounds begin at 4:00 p.m. when the day's work is reviewed and evaluated. Clinical clerks are expected to take call every third night. In addition to the daily Admissions Conference and Attending Rounds, there are daily House Staff Conferences, weekly Medical Grand Rounds, and weekly Morbidity and Mortality Conferences. On-call rooms are provided for students.

MEDC 548-07. Student Internship in Clinical Medicine, Baltimore V.A. Medical Center. The fourth-year medical student will be assigned to a general medical ward and will function as an intern, responsible to both his or her patients and the medical resident, as part of the entire ward team. Students will be taught to demonstrate logic, thoroughness and consistency in terms of: acquisition of database; comprehension and understanding of the patient's problems; development of medically sound, patient-oriented, diagnostic, therapeutic and education plans; carrying out such plans, including indicated diagnostic procedures; and outpatient follow-up of former inpatients in the Medical Clinic. This is a problem-oriented, not physician-oriented service, which considers patient welfare and educated care to be irrevocably joined. Learning during duty hours will be by precept and problem-oriented record keeping. Little time will be available during such hours for reading. Students will be taught to be reliant in drawing blood, starting IVs, examining body fluids, and taking and interpreting EKGs when patients' welfare and problems demand it.

DIVISION OF CARDIOLOGY

Professor and Head
Leonard Scherlis, MD
Professor
Michael L. Fisher, MD
Associate Professor
Mark M. Applefeld, MD
Nathan H. Carliner, MD
Yu Chen Lee, MD
Robert W. Peters, MD
Gary D. Plotnick, MD
Robert T. Singleton, MD
Assistant Professor
Rodney A. Johnson, MD
J. Lawrence Stafford, MD
Carl L. Tommaso, MD
Clinical Assistant Professor
Albert Antlitz, MD
Miriam L. Cohen, MD
Donald H. Dembo, MD
Michael H. Keleman, MD
George W. Moran, MD
Chris Papadopoulas, MD
Instructor
Lawrence F. Awalt, MD
Richard D. Biggs, Jr., MD
David A. Goldscher, MD
Luis F. Gonzalez, MD
Louis E. Grenzer, MD
John J. Messina, MD
Marc A. Mugmon, MD
Barry J. Weckesser, MD
Associate
Michael F. Plott, MD

Undergraduate Medical Program

Fourth Year

Clinical Cardiology Elective, University of Maryland Hospital. Students participate in patient evaluation and examination under the close supervision of faculty members. Basic concepts of physical examination are stressed and correlated with both noninvasive and invasive techniques of more detailed evaluation. The rotation includes an opportunity for adult and pediatric cardiology training in the clinics, coronary care unit, and graphics laboratory with emphasis on complete patient evaluation, as well as the development of individual areas of interest.

Postgraduate Fellowships

Selected applicants participate in the activities of the division including responsibilities for cardiac catheterization, electrocardiographic interpretation, vectorcardiographic interpretation, phonocardiology, echocardiography and exercise testing. The fellowships begin July 1 of each year and financial stipends are provided. Application is made through the head of the division and should be completed by November of the preceding year.

DIVISION OF DERMATOLOGY

Professor and Head
Joseph W. Burnett, MD
Professor
Colin Wood, MD
Clinical Professor
Eugene Bereston, MD
Albert Shapiro, MD
Associate Professor
Andrew G. Smith, PhD
Clinical Associate Professor
Joan Raskin, MD
Research Associate Professor
Gary J. Calton, PhD
Assistant Professor
Linda L. Lutz-Nagey, MD
Clinical Assistant Professor
Bruce E. Beacham, MD
Mouta Dilaimy, MD
Ronald Goldner, MD
W. Michael Gould, MD
Carolyn J. Pass, MD
Charles S. Samorodin, MD
Emmanuel Silverstein, MD
Bahram Sina, MD
Ronald J. Sweren, MD
M. Eugene Tudino, MD
Larry J. Warner, MD
Irving D. Wolfe, MD
Stanley N. Yaffe, MD

Instructor

Regina H. Anderson, MD
Ronald E. Bost, MD
William G. Brown, MD
Jeffrey A. Schuldenfrei, MD
John H. Stone, MD

Research Associate

David G. Cargo, MS

Undergraduate Medical Program

Third Year

DERM 530. Introduction To Dermatology. Students are assigned reading on the more common skin eruptions. Nine two-hour clinical sessions are held for each quarter of the junior class. Individual instruction is given by one of the senior staff members emphasizing the pertinent aspects of differential diagnosis. The relationship of cutaneous lesions to internal disease is stressed. (Dr. Burnett and Staff)

Fourth Year

DERM 541. Dermatology Elective. Dermatology may be taken as an elective during the fourth year. Students electing this course must have completed the required third-year dermatology course. Students will work together with the dermatology residents in the diagnosis and treatment of patients with skin eruptions. They will actively participate in grand rounds, daily seminars and the weekly journal club. They will also have the privilege of attending the clinical sessions of the Maryland Dermatological Society. (Dr. Burnett and Staff)

Graduate Program

Instruction is given in dermal pathology, microbiology, pharmacology, venereology, immunology and clinical dermatology. Trainees are required to attend local and regional Dermatology Society meetings. Attendance is also required at the annual meeting of the American Academy of Dermatology. The division helps to defray the expense of attending this meeting.

Trainees are encouraged to study research methods and to actively participate in studies. Part of the training period is spent at the Veterans Administration Medical Center and Mercy Hospital as well as the University of Maryland Medical System.

DIVISION OF ENDOCRINOLOGY AND METABOLISM

Professor and Head

Thomas B. Connor, MD

Professor

Bruce P. Hamilton, MB, ChB

Associate Professor

Luis G. Martin, MD

Assistant Professor

Philip A. Levin, MD
James H. Mersey, MD

Clinical Assistant Professor

Issam E. Cheikh, MD
Craig G. Haber, MD
Alfonzo H. Janoski, MD
George D. Lawrence, MD
Paul D. Levinson, MD
William A. Valente, MD

Instructor

Barry K. Lance, MD
Roy H. Phillips, MD
Luis E. Rivera, MD
Robert Stoner, MD

Associate

Francine D. Camitta, MD
David M. Shearer, MD

Research Associate

Jennifer H. Hamilton, MB
Gregory J. Kuzbida, MA
William W. Pavlis, MA

Undergraduate Medical Program

Second Year

In the second semester an intensive two-week course is given in collaboration with the Departments of Pathology, Pharmacology and Pediatrics. The course emphasizes the pathophysiologic basis for clinical disturbances of endocrine function.

Summer fellowships of eight to 10 weeks are also offered. These emphasize clinical or research training, depending upon the student's interests and capabilities.

Fourth Year

ENDO 541. Clinical Endocrinology and Metabolism Elective. Seniors are provided a broad clinical experience through a four-week concentrated period of training devoted mainly to a study of patients with clinical disorders of endocrine function. Students are involved in the day-to-day management of hospitalized patients and participate in weekly outpatient clinics under the direct supervision of staff members. The pathophysiologic basis for diagnostic and management aspects is presented at daily rounds and at weekly in-depth conferences with the students. A separate elective of 12 weeks is also available to interested students who may desire a longer period of training and/or wish to pursue a clinical or laboratory research project.

Affiliated Hospital Electives. Electives in Endocrinology are available at York (Pa.) Hospital and the Baltimore Veterans Administration Medical Center.

Postgraduate Fellowships

Full-time positions are available to selected candidates who have usually completed two or more years of house officer training. Fellows participate in ongoing research projects and independent investigations are encouraged. These trainees also participate in all clinical activities within the division. A financial stipend is provided. Applications may be made through the division head.

DIVISION OF GASTROENTEROLOGY

Professor and Head
Frank L. Iber, MD

Associate Professor
Richard A. Baum, MD
Sudhir K. Dutta, MD, BS
Salahm M. Nasrallah, MD
Elizabeth L. Rogers, MD

Clinical Associate Professor
Howard E. Raskin, MD

Assistant Professor
Patricia S. Latham, MD
David M. Saltzberg, MD

Clinical Assistant Professor
Michael E. Cox, MD
Renan J. Dureza, MD
Neil D. Goldberg, MD
Robert A. Hartley, MD
Colen C. Heinritz, MD
Gerald A. Hofkin, MD
Robert D. Mathieson, MD
Stanley E. Morrison, MD
Ashok Narang, MD
David B. Posner, MD
Mahin Shamszad, MD
Richard B. Williams, MD

Instructor
Michael O. Gum, PharmD
James S. Novick, MD
Jean M. Smith, MS

Undergraduate Medical Program

First and Second Year

Minimester in Liver Disease. Twenty-four hours devoted to selected topics and current pathophysiology and treatment concepts in clinical liver disease. Twelve topics such as jaundice, ascites, coma and portal hypertension are treated in depth.

Fourth Year

Clinical Elective. A broad clinical experience in consultations, reading and conferences on GI and liver problems. Students evaluate consultations with GI fellows and senior staff, plan diagnosis and management, and follow patients through definitive treatment and discharge. A series of specific goals are available for the four-week rotation and at least 30 papers are assigned during this time. The rotation includes attendance at six hours of conferences and 10 hours of GI clinical rounds each week and four hours of clinic.

Summer

Research Electives. GI, liver and nutrition electives are available and many carry a stipend. To obtain a stipend, application must be made by the first week in February.

DIVISION OF GENERAL MEDICINE (PRIMARY CARE)

Associate Professor and Acting Head
Mohamed S. Al-Ibrahim, MB, ChB

Professor
Robert L. Evans, MD

Associate Professor
Sheldon Amsel, MD

Clinical Associate Professor
James A. Quinlan, Jr., MD

Assistant Professor
Alan T. Cariski, MD
Gwen L. DuBois, MD
Emily S. Fairchild, MD
Milford M. Foxwell, MD
Joyce Y. Gross, MD
Daniel C. Hardesty, MD
Marguerite T. Moran, MD
Lawrence D. Weber, MD
Susan D. Wolfstal, MD

Clinical Assistant Professor
George M. Breza, MD
Victor R. Felipa, MD
Wilbur G. Fiscus, MD
Darrell M. Gray, MD
Wally S. Hijab, MD
Edward P. Koza, MD
Eugene V. Mazzocco, MD
George W. Moran, MD
John H. Mulholland, MD
Louis Randall, MD
Wallace A. Riley, MD
Wayne C. Spiggle, MD

Instructor
Gary A. Manko, MD
Scott T. Maurer, MD
James McPhillips, MD
Dorothy A. Snow, MD
Thomas Wiser, PharmD

At the University of Maryland the concept of the primary care physician is that of an individual who is: 1) skilled in multiple facets of health/illness care, both acute and chronic; 2) an educator of peers, pupils and the public; 3) interested in the impact of health care delivery and able to effectively evaluate his or her own efforts as well as the efforts of others in this endeavor; 4) able to perform effectively in management decision making and planning; and 5) an active participant in the affairs of the community.

It is the goal of the Primary Care Internal Medicine Program to prepare such a physician, beginning with primary care elective experiences during the senior year and continuing with an extensive graduate medical education program.

The Primary Care Residency Training Program in Internal Medicine was established in 1977. A Division of General Internal Medicine was established in January 1984. In addition to residency training, the division is responsible for the delivery of a wide range of primary health care services for ambulatory and hospitalized patients.

Residents have the unique experience of being associated with a team of health care profession educators, practitioners and research workers throughout the program. The faculty include primary care internists, primary care nurse practitioners, clinical pharmacists, psychiatrists, psychologists and social workers.

Research Interests

Through research grant support, health systems and health services research projects are being conducted. These projects include studies of the function, management and outcomes of a variety of medical practice organizations and research on hospital management and patient care.

Undergraduate Medical Program

Selected ambulatory primary care elective experiences are offered as part of the senior ambulatory rotations in internal medicine. For further information consult the Medicine section of the electives catalog. These primary care elective experiences occur both on campus and within the Area Health Education Center (AHEC) program off campus.

Graduate Program

A graduate medical education program in Primary Care Internal Medicine was initiated in July 1977. The goal of the residency program is the education and training of general internists who can be evaluated against the most stringent standards of quality in terms of their function as complete physicians. Our intent is to prepare these physicians for a new and expanded health care delivery role, and as innovators in the development of improved health care services. Special learning experiences are encouraged and are presently available in geriatrics, campus health, risk assessment and preventive counseling, and health services research.

The Primary Care Internal Medicine Program meets the requirements for certification by the American Board of Internal Medicine, as well as providing a broad medical background and experiences in management, planning, teaching and evaluation of health care.

DIVISION OF GEOGRAPHIC MEDICINE

Professor and Head
Myron M. Levine, MD, DTPH

Professor
G. Thomas Strickland, MD, PhD

Associate Professor
Robert E. Black, MD, MPH
Mary Lou Clements, MD, MPH
James B. Kaper, PhD

Research Associate Professor
Rabindra N. Patnaik, PhD
William E. Woodward, MD

Assistant Professor
Genevieve Losonsky, MD
J. Glenn Morris, MD, MPH, TM

Clinical Assistant Professor
Claudio F. Lanata, MD, MPH
James R. Murphy, PhD
Stephen D. Sears, MD, MPH

Research Assistant Professor
Joel M. Teitelbaum, PhD

Instructor
Catterine Ferreccio, MD, MPH
Timothy P. Hughes, BS
Charles R. Young, BA

Psychologist
John C. Rhead, PhD

Postgraduate fellowships are offered in conjunction with the Division of Infectious Diseases. Fellows spend their first year on clinical rotations including rotations on the infectious disease consultation services at the University of Maryland Medical System and the Baltimore Veterans Administration Medical Center, and rotations at the Maryland Institute for Emergency Medical Services Systems and the University of Maryland Cancer Center. The second year is spent doing research under the supervision of faculty members in the division.

Research can be conducted in the laboratories of the division in Baltimore, or in one of the division's field areas in Peru or Chile. Faculty research interests include the pathophysiology and epidemiology of enteric pathogens (cholera and other vibrios species; enterotoxigenic, enteropathogenic and enteroinvasive E. coli, Salmonella, Shigella, and rotavirus); infant growth and nutrition, influenza and other upper respiratory viruses and vaccine testing and development. The division maintains a close relationship with the Department of Epidemiology and Preventive Medicine, and fellows are encouraged to take courses in epidemiology and biostatistics during their training. Application for fellowships is made through the division head.

DIVISION OF HEMATOLOGY

Professor and Head
Charles A. Schiffer, MD
Associate Professor
R. Ben Dawson, MD
Joseph R. Testa, PhD
Assistant Professor
Edward J. Lee, MD
Meyer R. Heyman, MD
Richard D. Leavitt, MD
Douglas D. Ross, MD
Research Assistant Professor
Avrom Pollak, PhD
Instructor
Edward J. Lee, MD

Undergraduate Medical Program

First and Second Year
Members of the division participate in the hematology section of the sophomore course in clinical pathology. Clinical and laboratory features of all aspects of normal and abnormal hematopathology are presented.

Fourth Year
Clinical Elective. Broad clinical experience in consultation, reading and multiple conferences on malignant and nonmalignant hematologic problems are available. Students evaluate hematology consultations with fellows and senior staff and have the opportunity to attend multiple clinical and laboratory conferences, both within the division and the University of Maryland Cancer Center. Rotations are for a minimum of four weeks and provide an extensive experience in bone marrow performance and interpretation.

Research Electives. Summer research electives in hematology and the study of the hematologic malignancies are available. Opportunities are available to work in the Cell Component Therapy Section of the UMCC (a specialized transfusion service), an active cytogenetics laboratory, an immunology laboratory studying antigenic charactertistics of malignant cells, as well as the acquired immune deficiency syndrome (AIDS), electron microscopy laboratory and laboratories engaged in the study of leukemic cell differentiation and cellular pharmacology. Stipends may be available.

Postgraduate Fellowships

Two- to three-year postgraduate fellowships are offered in either hematology, oncology or the combination of the two subspecialties. Training is in coordination with the University of Maryland Cancer Center. A minimum of three years training and board eligibility in Internal Medicine are required.

DIVISION OF INFECTIOUS DISEASES

Professor and Head
Stephen C. Schimpff, MD

Professor
Frank M. Calia, MD
Jay S. Goodman, MD
Sheldon E. Greisman, MD

Research Professor
Merrill J. Snyder, PhD

Associate Professor
Ellis S. Caplan, MD
Harold C. Standiford, MD
James H. Tenney, MD
James C. Wade, MD
John W. Warren, MD

Clinical Associate Professor
Jean-Jacques Gunning, MD

Assistant Professor
George L. Drusano, MD
Ronald W. Geckler, MD
David E. Johnson, MD
Jai H. Joshi, MD
Marcia R. Moody, MD

Clinical Assistant Professor
William C. Anthony, MD
Manjari Joshi, MD
John P. Manzella, MD
John H. McConville, MD
Margaret B. Rennels, MD
Jerry E. Seals, MD
Celeste L. Woodward-Applefeld, MD

Research Assistant Professor
Sharon L. Hansen, PhD
Harry L. Mobley, PhD

Undergraduate Medical Program

Fourth Year

INFE 541. Training in Infectious Diseases Elective. (University of Maryland Medical System or Baltimore Veterans Administration Medical Center). The diagnosis of infections and proper management of patients with these diseases are taught by exposure of the student to practical, clinical, laboratory and research problems. The student will see consultations under the supervision of a full-time teaching fellow or medical resident. Attending rounds are made at least three times weekly. A weekly clinical infectious disease conference for faculty, house staff and students alternates between the University of Maryland Medical System and the Baltimore VA Medical Center. Additionally, student conferences covering urinary tract infections, pneumonia, meningitis and other common topics in infectious diseases are conducted by the postgraduate fellows twice weekly for all the students taking the elective at either hospital. Specialized programs are available at the University of Maryland Medical System in Pediatrics, the Maryland Institute for Emergency Medical Services Systems and the University of Maryland Cancer Center.

Affiliated Hospitals. Elective opportunities in infectious diseases are also available at York (Pa.), Maryland General and Mercy Hospitals.

Postgraduate Fellowships

The postgraduate fellowship is a two-year combined University of Maryland and Baltimore VA Medical Center program. The first year is clinically oriented and is spent at both hospitals consulting on patients with problems related to infectious diseases. Infectious disease experience is also obtained through rotations at the Maryland Institute of Emergency Medical Services Systems, the University of Maryland Cancer Center and the Department of Pediatrics. The fellow will see consults, supervise residents, interns and the medical students and spend much of his time teaching as well as in patient care. The second year of the program is oriented towards research. A third year for further research is recommended. Special interests in the division include newer antibiotics, nosocomial infections and vaccine development for viral and diarrheal diseases. A stipend of approximately $22,000 is provided. Application is made through the division head.

DIVISION OF INTRODUCTION TO MEDICINE (PHYSICAL DIAGNOSIS)

Undergraduate Medical Program

Second Year

PDIA 520. Introduction to Physical Diagnosis. The techniques of elaborating a clinical history and of performing a physical examination are provided to the class as a whole via an integrated lecture series given early in the year by various members of the clinical faculty. Simultaneous practical experience is provided in small tutorial groups in which the student examines hospitalized patients under the close supervision of members of the clinical faculty one afternoon a week throughout the academic year. Students acquire skills in the definition of the normal as well as the abnormal as they occur in the spectrum of human disease. Pathophysiologic correlations provide a basis for the continuing study of clinical medicine.

DIVISION OF NEPHROLOGY

Associate Professor and Head
John H. Sadler, MD

Associate Professor
Paul D. Light, MD
Emilio Ramos, MD

Assistant Professor
John Josselson, MD
Yu-Liang Shen, MD
Brian M. Spar, MD
Matthew R. Wier, MD

Clinical Assistant Professor
Cedric W. Bryan, MD
Bayinnah Shabbaz, MD

Research Assistant Professor
Barbara K. Urbaitis, PhD

Undergraduate Medical Program

Fourth Year

Nephrology Elective, University of Maryland Medical System. Students who have completed their required junior electives in medicine, surgery, pediatrics and obstetrics may elect a clinical rotation in nephrology. One-month to three-month electives will be accepted. The student is expected to become thoroughly familiar with the approach to patients with kidney disease and acquainted with clinical procedures. Each student will present at one Nephrology Conference. The typical rotation involves the student in seeing consultations with fellows and attending nephrologists, rounds on in-patients, Renal Clinic activities and exposure to the dialysis program. Students with special interest in particular aspects of kidney function or kidney disease may be permitted to pursue those after consultation with the division head.

NEPH 541. Nephrology Fellowship Elective, Maryland General Hospital. Students are exposed to the practice of clinical nephrology and to the management of acute and chronic renal failure.

MEDC 525. Second Year and Fourth Year — Human Renal Physiology. This one-month mini-mester course allows full-time concentration on renal and body fluid physiology with the students using themselves as laboratory subjects. Studies of renal function under different circumstances, mechanisms of water conservation, sodium balance and acid base balance will be studied. Laboratory sessions are held daily. Appropriate case presentations will illustrate disturbances of physiology. This class is limited to 16 students and offers an opportunity for prolonged and close contact with Division of Nephrology faculty as well as experience in laboratory measurements and observations of renal function through personal in vivo testing.

Third and Fourth Year

Nephrology Service in Junior and Senior Medicine. Ward Med 2 is designed to care for patients with kidney disease. Nurses on the floor are especially trained to handle these problems. When students, in the course of regular assignment on required junior and senior medicine, are assigned to this area, they find that 40-60 percent of their patients are renal patients and experience is gained in the management of complicated hypertension, glomerulonephritis and nephrotic syndrome, assorted toxic nephropathies and renal failure. Experience includes care of patients undergoing renal biopsy, peritoneal dialysis and hemodialysis. Close association with nephrology faculty allows for concentrated study of renal pathophysiology and pathology. Patients with renal disease and complications in other organ systems provide broad experience.

Postgraduate Fellowships

Qualified physicians may apply for full-time fellowships in nephrology. Although one-year fellowships of primarily clinical training are offered, preference will be given to those desiring two years of training. The first year is structured to produce broad experience in clinical nephrology, its procedures and its literature. Basic experience in the research lab is provided. The second year is largely elective, permitting fellows to pursue their chosen direction with planning and supervision. Additional years of experience for those undertaking special projects are available. Fellows completing this program are qualified and prepared to be certified in nephrology. The renal fellowship provides full clinical responsibility for numerous complex problems in renal pathophysiology, in the management of dialysis patients and experience in the care of patients undergoing kidney transplantation. The laboratory offers experience in studies of renal metabolism/function interrelationships and immunologic studies of kidney disease. The fellow is given significant responsibility in teaching second, third and fourth year students and in the supervision of residents on the consulting service.

DIVISION OF ONCOLOGY

Professor and Head
Joseph Aisner, MD

Professor
Robert E. Gallagher, MD

Associate Professor
Merrill J. Egorin, MD
Richard S. Kaplan, MD
David A. VanEcho, MD

Assistant Professor
L. Austin Doyle, MD
Mario Eisenberger, MD
Steven A. Fischkoff, MD
Michael B. Stewart, MD

Clinical Assistant Professor
Cynthia A. Forsthoff, MD
J. Leonard Lichtenfeld, MD
Karen M. Lichtenfeld, MD
Thomas L. Sacks, MD
Ko Pen Wang, MD

DIVISION OF PULMONARY DISEASES

Associate Professor and Acting Head
Thomas E. Hobbins, MD

Research Professor
Nedd R. Frank, MD

Clinical Associate Professor
Victor R. Hrehorovich, MD
Edward Rusche, MD
Peter B. Terry, MD

Research Associate Professor
H. David Kerr, MD
Thomas J. Kulle, PhD

Assistant Professor
Marie D. Chatham, MD
Peter Ebenstein, MD
Henry J. Silverman, MD

Clinical Assistant Professor
William B. Davidson, MD
Bernard P. Farrell, MB, BCh
Carmen A. Fratto, MD
William E. Randall, Jr., MD
Dennis Smith, MD

Instructor
Chi-Shiang Chen, MD
Stuart L. Jacobs, MD
Edward W. Schaefer, Jr., MD

Research Associate
James H. Millman, MD
Frank Shanty, PhD

Undergraduate Medical Program

First Year

Members of the division take part in teaching the physiology course with emphasis on the clinical application to basic respiratory physiology. This includes an introduction to clinical medicine and the sessions in the course on correlative medicine.

Second Year

During the subject systems portion of the second semester, a period of two weeks is devoted to the respiratory system. The teaching of clinical medicine is integrated with epidemiology, pharmacology and microbiology and is closely correlated with the teaching of physiology and pathology. This is not a course in respiratory diseases but the most common and important groups of diseases are included.

Third Year

During the rotation on medicine at the University of Maryland Medical System and Baltimore VA Medical Center, junior students have the opportunity to make contact with faculty members and fellows during clinical ward rounds on patients with pulmonary disease. A weekly pulmonary conference is held at each of these hospitals. Students have an opportunity to present cases from their wards.

Fourth Year

PULM 541-01. Pulmonary Diseases Elective. Fourth-year students participate in all of the activities of the division under the supervision of fellows and faculty. They see patients in the wards, in consultation, and in the outpatient clinic. The students review tests of pulmonary function and attend all of the conferences in which fellows and faculty participate. The emphasis is on the correlation of clinical features with pathophysiologic and roentgenographic features.

PULM 541-05. Medical Intensive Care Elective, University of Maryland Medical System. The goal of this course is to provide students with clinical experience in managing patients seen in a MICU. Students will function at the intern level as primary physicians and will work with the resident in charge, as well as the attending physician. Students will receive a sound background in circulatory and respiratory physiology. They will be exposed to various invasive techniques, including arterial line insertions, Swan-Ganz catheterizations and esophageal balloon placements. In addition there will be exposure to the use of mechanical ventilation in the critically ill patient.

Postgraduate Fellowships

Stipends are available for the support of three fellows at the current University of Maryland Medical System postgraduate scale. Three years of training in internal medicine are required. The goal of the program is to train physicians who are competent in the subspecialty of pulmonary medicine.

DIVISION OF RHEUMATOLOGY

Assistant Professor and Acting Head
Marcia C. Schmidt, MD

Assistant Professor
Raymond H. Flores, MD

Clinical Assistant Professor
John Wolfe Blotzer, MD
Ira T. Fine, MD
Thomas M. Zizic, MD

Undergraduate Medical Program

The Rheumatology Division offers several electives for senior students designed to present the spectrum of rheumatic disease and approaches to diagnosis and management. Integration of clinical features with the mechanisms of disease processes is accomplished through informal tutorial sessions as well as didactic lectures. The rationale for the various management programs including drug therapies, physical medicine and orthopaedic surgery is emphasized. Experience is gained in performance of diagnostic procedures (e.g., arthrocentesis) and in interpretation of relevant laboratory test systems.

Microbiology

Professor and Chairman
Charles L. Wisseman, Jr., MD

Professor
Laure Aurelian, PhD
Gerald A. Cole, PhD
Paul Fiset, MD, PhD
Kenneth P. Johnson, MD
Rosslyn W. I. Kessel, MBBS, PhD
G. Thomas Strickland, MD, PhD

Research Professor
Robert Traub, PhD

Adjunct Professor
Richard H. Baker, PhD

Associate Professor
David L. Camenga, MD
Ollie R. Eylar, PhD
Abdulrahman Farhang-Azad, PhD
Edmond A. Goidl, PhD
James B. Kaper, PhD
George K. Lewis, PhD
William F. Myers, PhD
David J. Silverman, PhD

Research Associate Professor
Paul M. Hoffman, MD

Adjunct Associate Professor
Martin V. Haspel, MD
Leonard W. Scheibel, MD, DSc

Assistant Professor
Barbara Hanson, PhD
Judith L. Lovchik, PhD
James R. Murphy, PhD

Research Assistant Professor
John A. Bilello, PhD
Donald R. Carrigan, PhD
Robert L. Hirsch, PhD
Roberta Kamin-Lewis, PhD
Foroozan Mokhtarian, PhD
Jose V. Ordonez, MD
Alan L. Schmaljohn, PhD

Adjunct Assistant Professor
Jonathan F. Smith, PhD

Training in microbiology and immunology within the medical school curriculum occurs primarily during the sophomore year when all students are required to take medical microbiology and immunology. Emphasis is placed on medical aspects of microbiology and immunology. In addition, elective courses specifically designed for medical students and selected graduate school courses are available to medical students in all years. Individual faculty members are available to provide instruction and guidance throughout the entire medical curriculum.

The department also offers the PhD degree. Although the MS degree may be offered in special instances, priority will be given to PhD aspirants. This department encourages students to enroll in the MD/PhD program.

Research Interests

The research programs within the Department of Microbiology reflect its orientation towards the broad biology of infectious and parasitic diseases. Projects include molecular and basic immunology, host-parasite interactions at the cellular and organismal levels, genetics and pathogenesis, field ecology and epidemiology and intervention mechanisms such as vaccine development and field trial. Emphasis has been on, but is not limited to, vector-borne rickettsial, viral and parasitic (malaria) agents. A new program focusing on viral and immunological diseases of the CNS is under development and will be a collaborative effort with the Department of Neurology. Medical students may participate for elective credit in the research programs within the department.

Undergraduate Medical Program

Second Year

MMIC 520. Medical Microbiology and Immunology (8). *First semester.* Though the precise time distribution will vary throughout the course, there will be an average of five lecture hours and seven hours in laboratory and group conferences per week. This course begins with an introduction to basic principles of immunology and then proceeds to consider the major groups of bacteria, spirochetes, fungi, rickettsiae, viruses and parasites that cause human disease. Emphasis is placed upon an

analysis of the properties of microorganisms thought to be important in pathogenesis of infection and interaction with host mechanisms, epidemiology, and control measures. (Staff)

Electives. Students are encouraged to take elective work throughout their training. The following are specifically designed for medical students:

MMIC 514. Medical Zoology and Parasitology. (Drs. Traub, Myers and Farhang-Azad)

MMIC 589. Research in Microbiology. (Staff)

A number of graduate school courses are also available to qualified students. Interested students should contact the department for details.

Neurology

Professor and Chairman
Kenneth P. Johnson, MD

Professor
Stephen R. Max, PhD
Richard E. Mayer, MD
Thomas R. Price, MD

Associate Professor
Maria Gumbinas, MD
Hillel S. Panitch, MD
James Reggia, MD
Marshall Rennels, MD
Granger G. Sutton, MD

Clinical Associate Professor
Ramesh Khurana, MD, BBD

Medical School Associate Professor
David Camenga, MD
Carol Koski, MD

Research Associate Professor
Rita Berndt, PhD
Otis Blaumanis, PhD
Paul M. Hoffman, MD

Assistant Professor
Gregory K. Bregey, MD
Edward S. Gratz, MD
Robert Hirsch, MD
Barbara Hulfish, MD
Sheldon Marguiles, MD

Clinical Assistant Professor
John Echoldt, MD
Paul S. Fishman, MD, PhD
Abraham A. Genut, MD
Anatol H. Oleynick, MD
Thaddeus Pula, MD
Richard Taylor, MD
Rodrigo Toro, MD

Research Assistant Professor
John Bilello, PhD
Donald R. Carrigan, PhD
Patricia A. Grady, PhD
Roberta Kamin-Lewis, PhD
Froozan Moktarian, Phd
Olin M. Pitts, PhD

Instructor
Susan R. Grant, PhD
Stanley Thurim, MD

Clinical Instructor
William Law, MD
Pavanjiti Sawhney, MD
Michael Sellman, MD

Research Associate
Doris K. Larson, PhD
Eitoku Toyoshima, PhD

Neurology is the study of the normal and diseased nervous system including central, peripheral and neuromuscular systems. Department members participate in courses in all four years of undergraduate medical education. While only relatively few medical students will choose careers in medical or surgical neurology or in the basic neurosciences, all medical graduates must have sufficient understanding of the basic structure and function of the nervous system to perform a satisfactory neurological examination, recognize and treat the many common neurological disorders and know when to refer the patient to a neurological specialist. Of special importance is the ability to distinguish between functional and organic neurological symptoms or signs.

The discipline of neurology has maintained close ties with basic science and by its complex but logical nature, has typified the scholarly aspects of medicine. Recent methodological and scientific advances have created a new and therapeutically-oriented specialty which is represented in the philosophy and goals of this department.

Research Interests

Special research programs within the Department of Neurology focus upon stroke and cerebrovascular disease, diseases of peripheral nerve and muscle and immunological diseases of the nervous system such as multiple sclerosis. Also under investigation is the application of computer science to neurologic diagnosis and treatment.

Undergraduate Medical Program

First and Second Years

NEUR 510. Neurological Sciences I. Lecture demonstrations of clinical cases constitute an integral part of this course. There is emphasis on correlation of anatomy and physiology with clinical material. Neurologic aspects of physical diagnosis are taught in the second year of medical school with instruction in performance of the normal neurologic examination as well as examination of selected patients with neurologic disorders. (Drs. T. Price and G. Sutton)

NEUR 520. Neurological Sciences II. In conjunction with the Department of Pathology, and with contributions from other clinical and basic science departments, there is a correlative course given in the second year of medical school in which pathology of the nervous system is correlated with clinical disease. (Dr. D. Camenga)

Third Year

NEUR 530. Neurological Sciences III. All members of the third year class have a three-week clerkship on the neurology-neurosurgery service at the University of Maryland Medical System or the Baltimore Veterans Administration Medical Center. A didactic series of lecture-demonstrations is given by the neurology and neurosurgery faculty, and students attend the combined conferences in both disciplines. In addition, students attend rounds and may assist in the performance of some procedures. Under house staff and attending staff supervision, students are responsible for the care of patients with neurological disorders.

Electives

NEUR 541. Clinical Electives. After completion of the third year, students are offered a variety of clinical experiences on the neurological service at: University of Maryland Medical System, Mercy Hospital, Montebello Rehabilitation Center, St. Agnes Hospital, Baltimore Veterans Administration Medical Center and York (Pa.) Hospital. The neurologic examination of the patient is emphasized, as well as the study and application of a wide variety of specialized

neurologic diagnostic techniques. Each student will become proficient in the taking of a neurologic history, the performance of the neurologic exam, the formulation of a reasonable diagnostic impression or differential diagnosis, and the planning of investigation and management for several of the more common neurologic problems. (Dr. C.L. Koski)

NEUR 548. Neurological Research Electives. In all four undergraduate years, a limited number of students will have the opportunity to work with individual members of the department in the following areas: 1) cerebrovascular physiology; 2) neuromuscular research; 3) neurophysiology; 4) vascular ultrastructure (SEM and TEM); 5) neurochemistry; 6) neurovirology; 7) autonomic nervous system; and 8) computers and neurology. Through involvement in ongoing research, the student will learn the principles and methods of investigating a problem. In some instances, especially with the longer electives, publication of results will be possible. (Dr. R. F. Mayer)

Fellowships

Students who have completed their first, second or third years and have an interest in neurologic sciences may apply for additional training in clinical neurology or in one of the research laboratories of the department. Qualified students may receive remuneration as fellows for the 10-week fellowships taken during vacation periods.

Graduate Program

There is a fully approved three-year training program in the specialty of neurology at the University of Maryland Medical System. This provides for clinical training as well as rotation through the associated basic science disciplines. In addition, fellowships are available for subspecialty neurology training, such as EEG and EMG. For further information contact the department chairperson.

Obstetrics and Gynecology

Professor and Chairman
- M. Carlyle Crenshaw, Jr., MD

Professor Emeritus
- Willard M. Allen, MD
- Arthur Haskins, MD
- Isadore A. Siegel, MD

Professor
- Maimon M. Cohen, PhD
- Abram B. Fajer, MD, PhD
- Marcos J. Pupkin, MD
- Umberto VillaSanta, MD

Medical School Professor
- James Durkan, MD

Associate Professor
- Eli Y. Adashi, MD
- Eugene D. Albrecht, PhD
- Joann A. Boughman, PhD
- Susan H. Fischman, PhD
- David A. Nagey, MD

Clinical Associate Professors
- Robert M. Barnett, MD
- Ernest I. Cornbrooks, Jr., MD
- James H. Dorsey, MD
- Edmund B. Middleton, MD
- Richard S. Munford, MD
- Salvatore Raiti, MB, BS
- Clifford Wheeless, MD

Medical School Associate Professor
- Ernesto Rivera-Rivera, MD

Assistant Professor
- Lindsay Alger, MD
- Charles R. Boice, MD
- Thomas H. Frank, PhD
- Gay Guzinski, MD
- Susan Panny, MD
- Michael Prystowsky, MD
- Benson C. Schwartz, PhD

Medical School Assistant Professor
- Susan Willard, MD

Clinical Assistant Professor
- Robert S. Coplan, MD
- Mukund S. Didolkar, MBB
- Sylvan Frieman, MD
- Laudelina R. Lahom, MD
- Leslie L. Mould, MD
- James E. Toher, MD

Ghevont W. Wartanian, MD
Barry M. Wolk, MD
Herbert L. Yousem, MD

Instructor

Mary A. Facciolo, BS
Cynthia Monshower, MD

Clinical Instructor

Dennis S. Ginsberg, MD
Emerson R. Julian, MD
Louis N. Randall, MD
Michael J. Sindler, MD
Joseph R. Tiraller, MD

Associate

Daniel Ehrlich, MD
Norman Levin, MD

The Department of Obstetrics and Gynecology emphasizes three areas of concern—education, research and service.

Educationally, the department provides a learning experience that encourages each student, regardless of ultimate career choice, to develop professional attitudes, diagnostic skills and knowledge relevant to the human female and to her sexual reproductive system. This experience enables each student to assume more effective responsibility for the general delivery of health care to the adolescent, to the adult and aging female and to the newborn.

The student is taught to recognize more accurately those patients who require special gynecologic consultation. Health-related social problems such as family planning are discussed as well as other aspects of population control, sexual difficulties, sterilization, induced abortion and unwed pregnancies.

The educational material is presented so as to familiarize students with all sources of knowledge relevant to these subject areas. Students may extend their knowledge and skills in a direction and depth appropriate to current and ultimate career goals. Students are also encouraged to take electives in basic, clinical and social research.

The service roles focus on the general areas of obstetrical and gynecologic care. Obstetrics deals with a high-risk pregnancy population and provides excellent educational opportunities for both student and resident. Specialty clinics in endocrinology, complicated pregnancy, cancer, pre- and post-operative evaluation, and family planning provide specific, specialized areas of instruction in addition to serving a large numbers of patients. Cancer detection and therapy play a major part in the gynecologic program.

The department is heavily committed to using audiovisual aids to enhance the educational experience of both medical students and residents. The faculty also contributes to the postgraduate educational programs at University of Maryland Medical System and throughout the state.

Undergraduate Medical Program

Third Year

OBST 530. Clinical Clerkship. Students are assigned to obstetrics and gynecology for a period of six weeks. As clinical clerks they participate in the original diagnostic studies, pelvic surgical procedures and post-operative care of hospitalized patients. Instruction in prenatal and gynecologic outpatient care is accomplished in the outpatient department. Seminars and departmental conferences with the attending staff and house officers are employed for teaching the art of correlating observations, diagnosis and therapy. Frequent and close contact with faculty is achieved by means of a preceptorial system which assigns a group of two or three students to a member of the faculty for the entire clerkship. As an alternative to the clerkship at the University of Maryland Medical System, a similar instructional program is offered to a limited number of students by the obstetrics and gynecology department at Mercy, South Baltimore General and St. Agnes Hospitals. (Staff)

Fourth Year Electives

OBST 541. Obstetrics and Gynecology Elective. The student may choose to rotate through a variety of areas within the department or may spend time more intensively in a specific area. (Staff)

Affiliated Hospitals. Electives are available at both Mercy and South Baltimore General Hospitals.

Ophthalmology

Professor and Chairman
Richard D. Richards, MD

Professor
Stanley S. Schocket, MD
Shambhu Varma, PhD

Clinical Professor
Leeds E. Katzen, MD
Lois A. Young, MD

Medical School Associate Professor
Vinod Lakhanpal, MD
Verinder S. Nirankari, MD

Clinical Associate Professor
Stephen B. Hameroff, MD

Assistant Professor
Edward J. Goldman, MD
James W. Karesh, MD

Clinical Assistant Professor
Stanley J. Amernick, MD
David A. Braver, MD
John J. Creamer, MD
Gilbert N. Feinberg, MD
Julian R. Goldberg, MD
Robert L. Kasper, MD
Earl D. Kidwell, MD
Martha B. Leffler, MD
Alfred Meisels, MD
Jay N. Parran, MD
Jerome Ross, MD
Richard M. Susel, MD

Instructor
Emery E. Billings, MD

Clinical Instructor
Theodore E. Cryer, MD
John Gambill, Jr. MD
Dahlia R. Hirsch, MD
Surinder Kaur, MD
Paul A. Kohlhepp, MD
Peter T. Lapinsky, MD
Renee A. Lerner, MD
Robert A. Loeb, MD
Kathleen H. Miller, MD
Vincent M. Notarangelo, MD
Thomas O'Rourk, MD
Mohammed S. Ousqui, MD
Lois Polatnick, MD
Brian J. Winter, MD

Research Associate
Paul Tittel, BS

The Department of Ophthalmology offers electives during the Junior and Senior year in clinical ophthalmology or research ophthalmology. For the clinical clerkship, time is divided between the outpatient clinic, ward and operating room. Students are expected to gain experience with diagnostic instruments used in ophthalmological evaluations. Patients with a wide range of diseases are seen in the clinic. Faculty with expertise in all ophthalmological subspecialty areas are present. Self-instructional aids are available. Conferences and grand rounds are included in the program.

Research Interests

Research efforts of the Department of Ophthalmology currently concentrate on ocular changes from diabetes mellitus and ocular toxicity of radiant energy. Other projects include biochemical effects of aldose reductase and specific inhibitors on the lens, including oxygen toxicity to the lens, particularly as related to light-induced damage. Opportunities exist for elective participation by qualified students in this active program of ophthalmic biochemical research. Postdoctoral fellowships in ophthalmic biochemistry are also available.

Graduate Program

A three-year residency program providing clinical training is offered at University of Maryland Medical System, with a rotation to Mercy Hospital. Appointment is by application to the Department of Ophthalmology, University of Maryland Medical System.

Postgraduate Program

Special courses for both nonspecialists and ophthalmologists are given at various times throughout the year by the Program of Continuing Medical Education.

Pathology

Professor and Chairman
- Benjamin F. Trump, MD

Professor
- Gunter F. Bahr, MD
- Nicholas DeClaris, ScD
- R. Ben Dawson, MD
- Robert E. Gallagher, MD
- Peter J. Goldblatt, MD
- Philip M. Grimley, MD
- John Higginson, MD
- Chao-Kaung Hsu, DVM, PhD
- Oscar A. Iseri, MD
- Elizabeth M. McDowell, PhD
- Wolfgang J. Mergner, MD, PhD
- Fathollah F. Mostofi, MD
- Peter Rasmussen, MD
- Moon L. Shin, MD
- Cyril Toker, MD

Medical School Professor
- Colin Wood, MD

Adjunct Professor
- B. R. Brinkley, PhD
- Isaiah Fidler, DVM, PhD
- Leslie Sobin, MD
- Sergei Sorokin, MD
- Robert A. Squire, DVM, PhD
- Marie Valdes-Dapena, MD

Associate Professor
- Ronald L. Anthony, PhD
- Nilambar Biswal, PhD
- Mary Hall-Craggs, MBBS
- Ih-Chang Hsu, PhD
- Raymond T. Jones, PhD
- Edward C. Knoblock, MS
- Thomas Koch, PhD
- Michael Lipsky, PhD
- Jason M. Masters, PhD
- Dezso K. Merenyi, MD
- Abulkalam Shamsuddin, MD, PhD
- James H. Tenney, MD
- Joseph R. Testa, PhD
- M. Wilson Toll, MD

Medical School Associate Professor
- Chen-Chih Sun, MD

Adjunct Associate Professor
- Belur S. Bhagavan, MD
- Dennis T. Burton, PhD
- John W. Combs, MD, PhD
- Robert Cranley, MD
- Raffaele David, MD
- Carol Sue Gleich, PhD
- Robert Wenk, MD

Clinical Associate Professor
- Yale H. Caplan, PhD
- William J. Hicken, MD
- Elizabeth Hillman-Matthews, PhD
- Kook M. Kim, MD
- Andrew J. Saladino, MD
- James E. Taylor, MD

Research Associate Professor
- Barry M. Heatfield, PhD
- Hans E. Kaiser, PhD
- Dallas Purnell, PhD

Visiting Associate Professor
- Annti Arstila, MD, PhD
- Kauno U. Laiho, MD
- Matti A. Penttila, MD, PhD

Assistant Professor
- Sudha Agarwal, PhD
- John E. Adams, MD
- Lawrence E. Briski, MD
- Richard Broadwell, PhD
- Glenn E. Brown, PhD
- Richard Cardy, DVM
- Neil Constantine, PhD
- Ann B. Dixon, MD
- Bennett Edelman, MD
- Julie L. Eisman, PhD
- Steven Fischkoff, MD
- Paul F. Guerin, MD
- Sharon Hansen, PhD
- Denise Harmening-Pittiglio, PhD
- Rouben Jiji, MD
- Myong W. Kahng, PhD
- Kevin P. Keenan, DVM, PhD
- Theodore J. Kula, PhD
- Patricia Latham, MD
- Steven E. Linberg, PhD
- Louis Marzella, MD, PhD
- Stephen R. Max, PhD
- Eric B. May, PhD
- Vinayak Pawar, PhD
- John V. Petrucci, MD
- Denise M. Pittiglio, PhD
- Toshihide Sato, MD
- Barry A. Silverman, DSc

Thomas D. Smith
David A. Symonds, MD
Anna Trifillis, PhD
Marion G. Valerio, DVM
Abu N. F. Zaman, MBBS

Medical School Assistant Professor

Willie Cartwright, MS
Ai-Shuan Cherng, MS
Lawrence McMichael, MS
Johanna Wilson, MS

Clinical Assistant Professor

Firooz Beheshti, MD
David L. Black, PhD
Rudiger Breitnecker, MD
Charles C. Brown, MD
Jyotsna K. Dhar, MD
David A. Dobrow, MD
Victor A. Fazekas, MD
Thomas G. Gipson, MD
Richard R. Graham, MD
Elizabeth Hill, MA
Violet H. Jiji, MD
Gregory R. Kauffman, MD
Robert A. Lancaster, MD
Barry S. Levine, PhD
Ramiro P. Linando, MD
Virginia Ling, MD
Carlos M. Orbegoso, MD
Jongsei Park, PhD
Amalia Seiguer, MD
John P. Sheehan, MD
Edward Sherrer, MD
Dennis F. Smyth, MD
John W. Soper, PhD
David A. Stout, MD
Esperanza Taimson, MD

Research Assistant Professor

Indu Ambudkar, PhD
William Coleman, PhD

Adjunct Assistant Professor

Belur S. Behagavan, MD
Dawn Goodman, VMD
Watson P. Kime, MD
Bert F. Morton, MD
Selvin Passen, MD
William R. Platt, MD
Warren Sheffield, DVM, PhD
Michael K. Stoskopf, DVM

Instructor

Mark Atcherson, BS
Martha Baer, BA
Irene K. Berezesky, BA
Seung-Han Chang, MS
Thomas W. Jones, BA
Olumide A. Kingbe, BS
Walter F. Oster, MD
Robert Pendergrass
Patricia C. Phelps, AB
Terry Reynolds, BS
Sheril L. Ross, MS
Sharon Rowland, MA
Michael Simon, BS
Mary Smith, MS
Robert G. Vigorito, MS, PA

Clinical Associate

Mohammed Hafiz, MD
Thomas E. Liszewski, BA

Research Associate

Jackson C. Andrews, BS
Ren-Sheng Chen, MD
John R. Cottrell, MS
Benjamin Cummings, PhD
Eric Hudson, BS
Robert L. Jenkins, BS
Harold J. Kisner, PhD
Gerald J. Kolaja, DVM, PhD
Robert Mottice, BS
Carnell Newkirk, MS
Deanna S. Robbins, PhD
James H. Resau, MS
Aziz A. Salib, PhD
Talia Sheridan, MS
Padmavathy Vanguri, MS
Angelique Varsou, PhD
Sildren Vergara, MD

Associate

Helene Hess, BA

Faculty Research Associate

Sandra Minton, MEd

The primary goal of the Department of Pathology is the better understanding of human disease with emphasis on mechanisms of disease and changes occurring at the subcellular level and in molecular terms. The student achieves this goal in three phases: 1) by acquiring the basic principles of pathology and applying those principles to the diagnosis and study of health care delivery as expressed in diagnostic areas such as surgical pathology, clinical pathology, cytology, forensic pathology and autopsy pathology; 2) by establishing a philosophy of critical evaluation and judgment concerning the problems of health and disease in humans; and 3) by developing feelings of personal responsibility and ethics for the practice of medicine.

The department's philosophy is that the study of disease includes both structure and function and is carried out from the level of the patient to that of the molecule.

The student is exposed to anatomical and clinical hospital pathology services with additional training at Baltimore Veterans Administration Medical Center and other local hospitals.

Research Interests

Research efforts in the Department of Pathology focus upon the pathobiologic mechanisms of human disease at the cellular, subcellular and molecular levels. Current projects involve a broad spectrum of diseases to include cancer, immunologic disease, heart disease, shock, infectious disease and aging.

Cancer research efforts focus upon accurately defining the sequence of events within cells following their exposure to confirmed carcinogens, mutagens and environmental toxins. This involves the development of varied strategies for assaying human risk from environmental pollutants and the development of animal and fish models for human disease with environmental etiologies.

Research efforts in heart disease are directed toward providing a definitive description of the mechanisms which lead to cell death subsequent to the depletion or complete loss of oxygen supply. Identification of parameters whose manipulation might result in impeding or halting cell death and development of improved methods of therapy for preventing the damaging effects of shock are integral components of this research.

Faculty research projects in infectious diseases focus on the delineation of the mechanism by which microbes invade and destroy human cells; the identification of microbial antigens with the capacity to elicit an autoimmune disease in the host; the study of mechanisms of immunologic injury as related to complement-mediated lysis; immune complex diseases and autoimmunity; and the analysis of the events leading to cell death as a consequence of the normal process of aging.

Undergraduate Medical Program

Second Year

PATH 501. General and Systemic Pathology. The essentials of pathology are covered in such a way as to form a good foundation for the student's continuing medical education. The course is divided into "general" or pathobiology and systemic pathology. It starts with the study of the basic principles of pathology as embodied in the areas of cell injury, inflammation, immunopathology, neoplasia, and environmental and forensic pathology. This is followed by the study of diseases of the various organ systems. Interdepartmental seminar-type presentations are given covering broad areas that are of interest to various disciplines. Clinical input is given through correlative sessions stressing mechanisms of disease. The course consists of lectures, small group laboratories and seminars. The laboratory sessions are in smaller groups under the direction of faculty members assigned to each student group. (Drs. Trump and Hall-Craggs)

Electives. Supplementing the core program are more than 20 course offerings for freshman, sophomore and senior medical students. These opportunities span a wide range of departmental activities from system-oriented courses such as renal, pulmonary, neurological or cardiovascular pathology to process-oriented instruction such as environmental pathology, carcinogenesis and research seminars. The latter are conducted with the aid of a number of guest speakers who are leading authorities in their fields. Research and clinical preceptorships are encouraged.

Other courses are of more general interest and include seminars in clinical pathology or clinical clerkships in Baltimore area hospitals. Medical students also have access to courses in experimental pathology such as histochemistry, tissue culture or pathological biochemistry.

Most of the above-mentioned courses, conforming with the 4-1-4-1 arrangement of the freshman and sophomore years, are offered in January and June while others are given during the regular semester as longitudinal electives. For course listing, time and content description consult the pathology section in the appropriate elective catalogs.

Advanced Accelerated Program in Pathology (AAPP). The AAPP admitted the first group of students in the fall of 1975 in an effort to permit early specialization and target-oriented education. The track in pathology begins in the freshman year. It makes use of all the resources of the Department of Pathology, and includes three types of experience: 1) exposure to the practice of pathology; 2) study of one selected field of study; and 3) exposure to research of disease. Five students are admitted during their first year. They are required to fulfill all the requirements of the medical school program; however, they are not pledged to seek a career in the field of pathology. The training in the track program should provide the student with the knowledge of a one-year residency program. Time spent in training within the track program can count towards elective or residency time. (Drs. Mergner and Dawson)

Graduate Program

MS or PhD Degree. The graduate program offers training and instruction in modern experimental pathology. Particular fields of interest presented are: instruction in pathological biochemistry, electron microscopy, immunopathology, histochemistry, tissue culture and physiology, as well as the various fields generally considered within clinical pathology.

MD/PhD Combined. Interested students should consult the department chairperson. For details of course offerings and admission requirements, see the pathology section in the Graduate School catalog.

Pediatrics

Professor and Chairman
Michael A. Berman, MD

Professor Emeritus
J. Edmund Bradley, MD
Samuel S. Glick, MD

Professor
Maimon M. Cohen, PhD
Stanford B. Friedman, MD
Felix P. Heald, MD
Shih-Wen Huang, MD
Murray M. Kappelman, MD
Allen A. Kowarski, MD
George A. Lentz, Jr., MD
Myron Max Levine, MD
Pinar T. Ozand, MD, PhD
Allen D. Schwartz, MD
J. Tyson Tildon, PhD
Karl H. Weaver, MD

Adjunct Professor
John W. Littlefield, MD

Clinical Professor
Ruth W. Baldwin, MD
Raymond L. Clemmens, MD
W. Ray Hepner, MD
Stuart Walker, MD

Research Professor
Nathan H. Sloan, PhD

Associate Professor
Lillian R. Blackmon, MD
Joel I. Brenner, MD
Maria T. Gumbinas, MD
Ronald L. Gutberlet, MD
Misbah Khan, MBBS, MPH
Salvatore Raiti, MBBS
Richard M. Sarles, MD
William M. Seabold, MD
Ulgan I. Sila, MD
Oscar C. Stine, MD, DrPH
Gibson Wells, MD

Medical School Associate Professor
Thomas J. Kenny, PhD
Prassana Nair, MD
Bernice Sigman, MD

Clinical Associate Professor
Sophia Balis, DDS
Mary Coleman, MD
Dennis J. Headings, MD
Barbara W. Hudson, MD
David Leaverton, MD
Gary W. Nyman, MD
Celeste L. Woodward, MD

Research Associate Professor
Mary Lou Oster-Granite, PhD
Warren D. Reed, PhD
Fariyal Ross-Sheriff, PhD
Horst R. Zielke, PhD

Visiting Associate Professor
Zvi Zadik, MD

Assistant Professor
Wulfred Berman, MB, ChB
Jeffrey L. Black, MD
Wayne Bohannon, PhD
Paul Burgan, MD, PhD
Stuart A. Chalew, MD
Kwok-Sing Cheung, PhD
Regina Cicci, PhD
Shahnaz Duara, MD
Gary Fleming, MD
James G. Gamble, MD
Richard L. Gorman, MD
Carolyn Gould, MD
Edward Gratz, MD
Renee P. Howard, MD
Marc S. Jacobson, MD
Roberto A. Jodorkovsky, MD
Alp Karahasan, MD, PhD
Howard Klein, MD
Richard Lavy, MD
Phillip A. Levin, MD
James M. Lewis, MD
Ruth E. Luddy, MD
Lani Majer, MD
Stephen R. Max, PhD
Judith V. McLaughlin, MD
Charles R. Medani, MD
Robert G. Meny, MD
Letitia Pierce, MD
Sheridan Phillips, PhD
Raveedran Pottathil, PhD
Margaret Rennels, MD
Richard E. Ringel, MD
Lois M. Roeder, ScD
Miriam C. Turner, MD
Deborah Weber, MD
Steven L. Weinstein, MD
Margaret M. Wilusz, DO, MPH

Kevin J. Winn, MD
Linda Wright, MD
Deborah Young-Heyman, MD

Medical School Assistant Professor

Louis D. Burgio, PhD
Alice Hayes, MD
Lenore Howard, MA
Bimal Pal, MD
Elaine M. Rubenstein, MD
Arturo Santos, MD
George R. Schekart, PhD

Clinical Assistant Professor

Sudha Agarwal, MD
Robert Ancona, MD
Stephanie Bergey, MD
Howard Bierenbaum, PhD
David Bromberg, MD
Robert Dawson, MD
Eric M. Fine, MD, MPH
Mary A. Fox, MD
David B. Graham, MD
Linda E. Grossman, MD
R. Edward Harpin, Jr., PhD
Frederick Heldrich, MD
Thomas Hunt, PhD
Theodore H. Kaiser, MD
Felix L. Kaufman, MD
Wendy Klein-Schwartz, MD
Laudelina Lahom, MD
Richard D. Leavitt, MD
Richard L. London, MD
Eva McCullars, MD
Norman L. Miller, MD
Robert E. Miller, MD
John L. Morgan, MD
Robert Mosser, MD
Paul A. Mullan, MD
Clayton Norton, MD
Boris L. O'Mansky, MD
Susan R. Panny, MD
Shelly J. Parr, MD
Arvind K. Pathak, MD
Albert Powell, MD
Nina C. Rawlings, MD
Charles M. Reilly, MD
Kenneth B. Roberts, MD
Judith D. Rubin, MD, MPH
Elizabeth Ruff, MD
Sidney B. Seidman, MD
Charles D. Shubin, MD
James Shumway, MD
Jean Smith, MS
Ronald J. Sweren, MD
J. Willard E. Standiford, MD
Victoria Tayengco-Masigo, MD
Robert E. Yim, MD

Research Assistant Professor

Richard C. Gethmann, PhD
Judith C. Lovchik, PhD
Mary C. McKenna, PhD
Raymond H. Starr, Jr., PhD
Carol Zielke, PhD

Visiting Assistant Professor

Carlos E. Villeda, MD

Instructor

Ruth Ashman, MD
Kathleen A. Awalt, MS
Sheria A. Bellow, PhD
Moshay Cooper, MD
Stephen A. Dubansky, MD
J. Ramsay Farah, MD, MPH
Peter Ferra, MD, MPH
Elizabeth Gong, MD
James C. King, MD
Richard C. Lang, MD
Daniel J. Levy, MD
Sharon C. Siegel, DDS
William A. Sinton, Jr., MD
Diane L. Sondheimer, MSN
Eric VanBuskirk, MD
Deborah Young-Hyman, PhD

Clinical Instructor

Marbry G. Bauernschub, MD
Teresita S. Beltran, MD
LeRoy Bernstein, MD
Edwin H. T. Besson, MD
Maureen M. Black, PhD
James A. Brahlek, PhD
William A. Bryant, Jr., MD
George W. Dorry, PhD
Rupla Eshai, MBBS
Shohreh Farivari, DDS
Stephen R. Feldman, MD
Claire Freeland, MD

Sharon L. Hammond, MD
Daniel Kalaskowski, MD
Kenneth Klebanow, MD
Shawki Malek, MD
Derrick K. Matthews, MD
Harriet L. Meier, MD
Radhamma Nair, MD
David I. Otto, MD
Edward L. Perl, MD
Marc A. Rawitt, MD
Robert E. Scalettar, MD
Milton E. Strauss, PhD

Research Associate

Lydia Hernaez-Davis, PhD
Ann F. Jewell, MS
Martha G. Price, PhD
Susan Schindler, BS

The efforts of the Department of Pediatrics are directed towards providing the best possible services for children while deriving an educational program to meet the needs of individual students, physicians and other health care workers. By preparing physicians and other health care professionals to provide quality, comprehensive care for infants, children and adolescents, the department can best satisfy the vital need for child health services in the community. Included among the providers of health care are not only pediatric generalists, but also basic scientists, health educators, subspecialists, medical center academicians, community health planners and students of all of these disciplines. The Department of Pediatrics seeks to play a dynamic role in the development of these health professionals throughout all levels of their education—undergraduate, graduate and postgraduate.

A clinical clerkship experience is offered with in-patients, full-term infants and ambulatory patients. A wide variety of electives are also available which provide opportunities to explore aspects of preclinical and clinical pediatric research, additional individualized in-patient and ambulatory clinical clerkships, specific preceptorships, subspecialty experiences and community pediatrics.

Research Interests

The research efforts of the Department of Pediatrics are directed toward understanding problems related to abnormal development. These studies employ sophisticated research strategies and the newest technical equipment to obtain answers to problems in the perinatal, neonatal, childhood and adolescent periods. Several major categories of research include an investigation into the causes and treatments of mental retardation, a multidisciplinary examination of the various aspects of the sudden infant death syndrome, the examination of immunological and microbiological factors associated with problems of early development, a series of studies related to neonatal metabolism and a well-defined group of psychological studies. These and other research efforts have been successfully integrated into the service and teaching program within the department.

Undergraduate Medical Program

(Under Division of Pediatric Education; Murray Kappelman, MD, Director)

First Year

PSYCH 510. Behavioral and Social Sciences. Presentations are made characterizing aspects of growth and development.

HCPR 511. Introduction to Clinical Practice in Pediatrics. The course includes material on the approach to children in various age groups as well as demonstrations of physical examinations of infants, children and adolescents. These presentations and demonstrations are followed by small group discussions. (Dr. Nair)

Second Year

PEDI 521. Pediatric Physical Diagnosis. Individualized experience is offered in taking pediatric medical histories and the performing of physical examinations under the direct supervision of a preceptor. (Dr. Mosser)

Third Year

PEDI 530. Clerkship. Students are assigned as clinical clerks for a period of six weeks at either the University of Maryland Medical System, Mercy, Union Memorial or South Baltimore General hospitals. Each of these facilities provides clinical experience in pediatrics (including nurseries) as well as in ambulatory services.

Regularly scheduled conferences include pediatric subspecialty areas and are supplemented with chart conferences, case discussions, evaluations of neonatal mortality and journal reviews. Small group tutorials cover concepts of pathophysiology and the therapeutic management of pediatric patients. The total impact of the illness on the child and family is emphasized. The student is encouraged to become familiar with all aspects of pediatric practice. (Dr. C. Woodward)

Fourth Year

PEDI 540. Pediatric Electives. The variety of elective experiences include student internships in a nursery setting, on wards and within ambulatory care centers. Laboratory research studies may be pursued as well as experiences in specific pediatric subspecialties. Please refer to the medical school electives catalog. (Dr. Sigman)

PEDI 548. There is a possibility of spending the required eight-week senior student internship on the pediatric wards of the University of Maryland Medical System or one of the affiliated hospitals.

PEDI 541. Pediatric ambulatory sites are available for the required eight-week senior ambulatory rotations.

Minimester Electives. The department offers a wide range of experiences including some in preclinical and clinical research. For a complete listing, please refer to the medical school minimester catalog.

Pharmacology and Experimental Therapeutics

Professor and Chairman

Edson X. Albuquerque, MD, PhD

Professor Emeritus

John C. Krantz, Jr., PhD

Professor

Laure Aurelian, PhD
Mohyee E. Eldefrawi, PhD
Martin Helrich, MD
Frederick C. Kauffman, PhD
Stephen C. Schimpff, MD

Research Professor

Amira T. Eldefrawi, PhD

Adjunct Professor

N. Bachur, MD, PhD
John W. Daly, PhD
Leopoldo DeMeis, PhD
Donald R. Jasinski, MD
Martin G. Larabee, MD, PhD
Bernard Witkop, PhD, ScD

Associate Professor
Alan F. Boyne, PhD
Angela Brodie, PhD
Neville Brookes, PhD
David R. Burt, PhD
Merrill J. Egorin, MD
Stephen R. Goldberg, PhD
Jordan E. Warnick, PhD
Daniel Weinreich, PhD
Visiting Associate Professor
Alauce S. Viana, PhD
Adjunct Assistant Professor
Jonathan L. Katz, PhD
Charles E. Spivak, PhD
Research Assistant Professor
Charles N. Allen, PhD
Sharad S. Deshpande, PhD
Sue A. Hudson, PhD
Su-Shu P. Pan, PhD
Karin Sikora-VanMeter, PhD
Cynthia Smith, PhD
Patricia Sokolove, PhD
Paul Yarowsky, PhD
Research Associate
Ibrahim M. Abalis, PhD
Yasco Aracava, PhD
Jonathan Carp, PhD
John C. Fowler, PhD
Robert W. Green, PhD
K. P. Hepper, PhD
Lydia Hernauz-Davis, PhD
M. H . M. Idriss, PhD
Charles Meshul, PhD
Syed M. Naseem, PhD
Antonio Carlos Oliveira, PhD
H. Otta, MD, PhD
Nancy S. Pilottee, PhD
K. S. R. Rao, PhD
Sharon A. Reutter, PhD
Rebecca G. Rudo, MS
K. P. Shaw, MD
Shelby M. Sherby, PhD
Karen L. Swanson, PhD
Lih-Y. C. Wing, PhD
Q. Z. Yang, PhD

The department's objectives are to teach undergraduate medical students those principles underlying the distribution, metabolism, mechanism of action and toxicity of therapeutic agents or substances. At the graduate level, three areas of studies are incorporated: 1) training in the various aspects of pharmacology; 2) increasing effectiveness of drugs used in treatment of human diseases; and 3) researching to better understand drug action.

The Graduate School catalog lists a number of graduate courses and electives offered to medical students. Arrangements for combined MD/PhD training are made on an individual basis.

Undergraduate Medical Program

Second Year

MPET 520. Medical Pharmacology. The pharmacological basis for therapeutics is presented with an emphasis on the mechanism of drug action. (Dr. Albuquerque and faculty)

Minimester Electives. The department offers a variety of courses during the minimester portion of the curriculum. Consult the electives catalog for further details.
details.

Physiology

Professor and Chairman
Mordecai P. Blaustein, MD
Professor Emeritus
Dietrich C. Smith, PhD
Professor
Charles A. Barraclough, PhD
Cornelia P. Channing, PhD
Abram B. Fajer, MD, PhD
Edmund M. Glaser, DEng
Lawrence Goldman, PhD
Sheldon E. Greisman, MD
Gabriel G. Pinter, MD
Daniel S. Ruchkin, DEng

Associate Professor
Eli Adashi, MD
Eugene D. Albrecht, PhD
Bruce K. Krueger, PhD
W. Jonathan Lederer, MD, PhD
Michael K. Selmanoff, PhD
James B. Wade, PhD
Phyllis M. Wise, PhD
Adjunct Associate Professor
Edward G. Lakatta, MD
Assistant Professor
Bradley E. Alger, PhD
Gregory Bergey, MD
Robert J. Bloch, PhD
W. Gil Wier, PhD
Medical School Assistant Professor
Thomas C. Vary, PhD
Research Assistant Professor
David Eisner, PhD
John M. Hamlyn, PhD
Ann S. Hobbs, PhD
Nathaniel T. McMullen, PhD
Mark T. Nelson, PhD
Richard D. Vaughan-Jones, PhD
Research Associates
Jay M. Baraban, MD, PhD
Dieter K. Bartschat, MD, PhD
Eduardo Marban, MD, PhD
Eligio Santiago, DDS
Malle A. Tagamets, PhD

The Department of Physiology provides lecture, laboratory and seminar courses in the principles of mammalian physiology for students of medicine. Also offered are advanced courses in special areas of physiology for graduate students, fellows and interested medical students.

Research Interests

The Department of Physiology is dedicated to the elucidation of fundamental new information about the mechanisms that underlie a variety of physiological processes. Many of the department's research programs focus on three general areas; cell and membrane physiology, neurobiology and reproductive endocrinology. The research programs encompass a number of topics with direct clinical relevance, including projects related to aging, cardiac arrhythmias, contraception, diabetes, epilepsy, hypertension and schizophrenia. Medical students are encouraged to participate in research activities during summer and other elective periods. Opportunities for combined MD/PhD training are also available.

Undergraduate Medical Program

First Year

MPHY 501. Principles of Physiology and Biophysics. Lectures, laboratory and conferences during the spring semester. A course in the principles of human physiology and biophysics covering cellular, cardiovascular, renal, respiratory, gastrointestinal and endocrine physiology. Conference periods are used for clinical correlations and small group discussions. Under some circumstances, a limited number of students may elect an alternative program of laboratory work and/or library reading with written reports and conferences. (Dr. Blaustein and staff)

MPHY 513. Neurological Sciences. See Anatomy. (MANA 513)

Other Opportunities. A variety of minimester courses and advanced seminars or research in special areas of physiology are open to interested students during the elective period or other free time. Combined MD/PhD programs, requiring additional course work and original research, are offered for highly qualified medical students.

Fourth Year

MPHY 542. Seminars in Physiology Elective. Advanced graduate seminars in selected fields of physiology (e.g., cardiovascular, renal, endocrine and neural) are offered, usually two each semester.

MPHY 548. Research Elective in Physiology. In selected fields.

Psychiatry

Professor and Chairman
Russell R. Monroe, MD

Professor Emeritus
Virginia Huffer, MD
Ephraim T. Lisansky, MD

Professor
George U. Balis, MD
Eugene B. Brody, MD
William T. Carpenter, Jr., MD
Robert G. Grenell, PhD
Herbert S. Gross, MD
James J. Lynch, PhD
Walter Weintraub, MD

Medical School Professor
Constantine J. Sakles, MD

Clinical Professor
Sheila H. Gray, MD
John R. Lion, MD
Sheldon I. Miller, MD
Jonas R. Rappeport, MD
Nathan Schnaper, MD

Research Professor
Leona Bachrach, PhD
Jon Stolk, MD, PhD
Robert Thatcher, PhD

Adjunct Professor
William L. Webb

Associate Professor
Raymond L. Clemmens, MD
Gerard Hunt, PhD
Ellen McDaniel, MD
Taghi M. Modarressi, MD
Thurman Mott, Jr., MD
S. Michael Plaut, PhD
Joan M. Scratton, MSW

Medical School Associate Professor
Walter F. Baile, MD
Lois Flaherty, MD
Manoel Penna, MD

Clinical Associate Professor
Jose Arana, MD
Robert Cumming, MD
George E. Gallahorn, MD
Ghislaine D. Godenne, MD
William Holden, MD
Barbara D. Ingersoll, PhD
Murray Kappelman, MD
Ann Lewis, MD
Denis Madden, PhD
Gary Nyman, MD
Elizabeth Robinson, MD
Richard M. Sarles, MD

Research Associate Professor
Thomas Hanlon, PhD
Jon E. Rolf, PhD
Robert Schwarcz, PhD
Milton E. Strauss, PhD
Carol A. Tamminga, MD
Althea Wagman, PhD

Assistant Professor
Mary J. Albright, PhD
Norman H. Bradford, PhD
George M. Cohen, MS
Pearl Katz, PhD
Lani Majer, MD
Sheridan A. Phillips, PhD
Leonard Press, SSA
Jeffrey Sobal, PhD

Medical School Assistant Professor
Larry D. Alphs, MD, PhD
Jill Berkowitz, MD
Lois Conn, MD
Michael Gotts, MD
Judith F. Haran, MSW
Brian W. Hastings, MD
Brian Hepburn, MD
Paul A. McClelland, MD
Barry F. Rudnick, MD
Susan Strahan, MD
Stuart Tiegel, MSW
Neil E. Warres, MD
Susan Woolsey, MD
Bradley Zebal, MSW

Clinical Assistant Professor
Katherine Ackerman, MD
Lawrence W. Adler, MD
Richard H. Anderson, MD
James M. Barnes, MD
Gary G. Bawtinhimer, MD
Fontaine M. Belford, MD
Bohumil Beran, MD
Samuel Blumenfeld, MD
Pablo R. Bogado, MD
Myron D. Brenner, MD
Owen D. Buck, MD
Francis L. Carney, PhD
Richard Carter, PhD

Jonathan L. Chasen, MD
Louis H. Cohen, MD
Mark W. Crandall, MD
Nathan Davis, MD
Frank Eisenberg, MD
William Feder, MD
B. Gregory Fernandopulle, MD
Robert Fiscella, MD
Frances J. Fitch, MS
Victor D. Fitterman, MSW
Susanna Freimer, MD
Mary L. Furth, MD, MPH
Jose A. Gelpi, MD
Kate L. Genut, MSW
Peter Gleason, MD
Allan S. Gold, MD
Beverli S. Goldberg, MD
Samuel Goldberg, MD
Edward G. Grace, DDS
Linda E. Grossman, MD
Alicia J. Guttman, MD
Robert Guziec, MD
Mohammad Haerian, MD
Sung-Up Hahn, MD
Barbara Hulfish, MD
Lorraine L. Hunt, PhD
Lawrence R. Hyman, MD
Annette Z. Iglarsh, PhD
Rao V. Inaganti, MD
Frank Johnson, MD
Daniel F. Johnston, MD
Thomas J. Kenny, PhD
Kristen H. Kjerulff, PhD
Nancy Kohn-Rabin, PhD
Thomas F. Krajewski, MD
Gerald M. Lazar, MD
Sandra A. Leichtman, PhD
Leon Levin, MD
Howard K. Mason, MD
Martha McLaney, MSW
Jacqueline Melonas, MS
Daniel Merlis, MSW
Frances M. Mondimore, MD
Nancy G. Moss, MS
Patricia A. Newton, MD
Sebastian O'Brian, III, MD
Harry A. Oleynick, MD
James E. Olsson, PhD
Ruth Oppenhiemer, BA
David Paskewtiz, PhD
Daniel S. Pearl, MD
Edward V. Pecukonis, MSW
Jay Phillips, MD
Egya Quaison-Sackey, MD
Rosalie G. Rapoport, MSW
Robert G. Robinson, MD
Sharon Rose, MD
Andrew B. Rudo, MD
Paul Ruskin, MD
Patrick Scally, MSW
Richard H. Schreder, MSW, PhD
Robert K. Schreter, MD
Patti Seman, MSW
Jane Shumway, MD
Kenneth Solomon, MD
William A. Sonis, MD
Michael K. Spodak, MD
David Student, MD
Fereidoon Taghizadeh, MD
Marion Thomas, MD
James W. Thompson, MD, PhD
Ulku Ulgar, MD
Marianne Walters, MSW
Stephen Warres, MD
Roger Waterman, MD
Dewitt Weatherly, MD
Fred A. White, PhD
Peter Williams, MD
Penelope P. Ziegler, MD

Research Assistant Professor

Edward French, PhD
Douglas W. Heinrichs, MD
Ann Pulver, MD

Instructor

Elizabeth Heuisler, MFA
Michael D. Jasnow, MA
Ralph Gerard Kelly, MD
Myun K. Kim, MD
Spyros Monopolis, MD
James J. O'Donnell, MS
Jeffrey S. Rubin, BA
Silverine Samaranayake, MD
Lawrence Sandler, MD
Madelyn J. Siegel, MD
Raju Varghese, MD
Meenakshi Vimalanada, MD

Clinical Instructor

Robert Atkins, MD
Richard Bacharach, MD
Neil H. Blumberg, MD
Lynn D. Cunningham, MSW
Mahmond Jahromi, MD
Robert H. Lehman, MD
Lizzy Pallan, MD
Charles P. Peters, MD
Penelope Purcell, MA
Marlene E. Rogers, MD
Irvin I. Steinbach, MA
Janice E. Stevenson, PhD
David L. Waltos, MD

Research Associate

Patricia Bartlett
Barry Cohen, BA
Rose K. Cringle, PhD
Steven Curry, BA
Ras B. Guchhait, PhD
John David Herron, MSW
Kevin M. Lyons, MA
Duncan McCullouch, BS
John McGrath, MA
Mary Miller, MA
Susan L. Parks, BA
Madelyn Stolk, BA
Ann Summerfelt, BA
Gunvant Thaker, MD
Anna Marie Vezzani, PhD
Paula S. Wolyniec, MA

The goal of undergraduate psychiatric education is to acquire an understanding of and an appreciation for the application of behavioral and psychiatric principles in patient care and health maintenance through an exposure to a progressive sequence of intellectual stimulations, clinical experiences and appropriate professional socialization. More specifically, the curriculum aims to assist the student in: 1) acquiring a foundation of knowledge regarding the psychological, sociological and humanistic aspects of the practice of medicine; 2) mastering basic interpersonal and psychiatric skills relevant to the management of patients with medical and/or emotional illness; 3) emulating attitudes and values which enhance the professional roles and practices of a physician.

The curriculum is divided into a Core Program which consists of required courses offered during the first three years of medical education and an Electives Program which provides a variety of courses (clinical, didactic and research) for the students who are interested in furthering their knowledge and experience in some aspect of the theory and practice of psychiatry and its related fields. These elective courses are offered during the January and June minimesters of the preclinical years and in the senior year. The four-year Combined Accelerated Program in Psychiatry (CAPP) is offered as an advanced elective track to selected students with a special interest in the behavioral sciences.

Undergraduate Medical Program

First Year

PSYH 510. Behavioral and Social Sciences. (90 hours). This interdisciplinary course provides a context for the integration of diverse behavioral science contributions which are relevant to the understanding of human behavior. It is presented jointly by the Departments of Psychiatry, Epidemiology and Preventive Medicine, and Pediatrics, and is coordinated by an interdepartmental committee. The emphasis is on the emergence of a broader concept of life sciences that consitute medicine—one that views the human organism holistically as a dynamic biological system whose inherent aspects of structure, organization, ontogeny and functioning are determined or influenced by developmental, intrapsychic, interpersonal and sociocultural factors. The course runs through both semesters, three hours per week. (Dr. Balis)

First Semester: Dimensions of Behavior. This section provides basic introductory concepts in the field of behavioral and social sciences, and is primarily designed to meet the needs of those students whose premedical curriculum

did not allow sufficient exposure to these sciences. The central theme is man as an individual viewed from a developmental, intrapersonal, interpersonal and humanistic viewpoint, and as he emerges through the vicissitudes of the family life cycle. These basic dimensions of behavior are presented in the following course units: 1) Human Growth and Development (Dr. Sarles); 2) Personality and Behavior; and 3) Human Interaction (Dr. G. Hunt). These are lecture demonstrations coupled with small group discussions.

Second Semester: Behavioral and Social Sciences and the Practice of Medicine. This section views man in his transactions with the environment and in the context of larger systems, including social, governmental and institutional. Its major focus is on the psychological, interpersonal, and sociocultural aspects of illness and health care. Course units include: 1) Psychosomatic Aspects of Illness (Dr. Lynch); 2) Social, Cultural and Organizational Aspects of Health Care (Dr. Sexton); and 3) Cultural Aspects of Illness (Dr. Amarasingham). The pedagogic approach is based on lecture-demonstrations and patient interviews as well as small group discussions.

Second Year

The goal of sophomore psychiatry is to provide students with a foundation of clinical knowledge in the area of psychopathology and psychiatric diagnosis as a preparation for their junior clerkship in psychiatry. This sequence is organized around two courses as follows:

Practicum in Psychiatric Evaluation. Offered as part of the Year II Introduction to Clinical Practice, this course consists of six two-hour sessions per student rotation. About 30 students rotate in this course every six weeks. The course objectives include psychiatric interviewing techniques and psychiatric history taking, mental status examination, differential diagnosis and development of psychodynamic understanding. Its format consists of small group sessions involving live patient interviews. (Dr. A. Lewis)

PSYCH 520. Psychopathology. (60 hours). In the first semester the focus is on the descriptive aspects of psychopathology, providing clinical knowledge in the area of psychiatric nosology including symptom identification and their clustering into syndromes, clinical description of diagnostic entities, and psychiatric nomenclature. The second semester is divided into three sequences: 1) Psychopathology of Child and Adolescence (Dr. Sarles); 2) Biological Mechanisms of Psychopathology and Relevant Therapies (Dr. Balis); and 3) Psychosocial Mechanisms of Psychopathology and Relevant Therapies (Dr. McDaniel). The second semester emphasizes the multilevel contributions to the pathogenesis of disordered behavior, focusing on etiology, pathogenesis, epidemiology, and treatment of psychiatric disorders. The pedagogic technique during the first semester consists of a brief, 20-minute lecture on the subject followed or preceded by a clinical demonstration. Psychopathology is demonstrated by films, videotapes and live interviews with patients. The instructional format of the second semester consists of lecture-demonstrations. (Drs. Monroe and Balis)

Clinical Years

PSYCH 530. Psychiatric Clinical Clerkship. (six weeks). The clerkship experience involves both in-patient and out-patient assignments. Clerkship consists of full-time assignment to one of the following hospital facilities: 1) Institute of Psychiatry and Human Behavior, 2) Sheppard and Enoch Pratt Hospital, 3) Sinai Hospital, 4) Wyman Park Health System, 5) Walter P. Carter Community Mental Health Center, and 6) Spring Grove Hospital Center. More than 60% of the juniors are trained intramurally at the Institute of Psychiatry and Human Behavior. All students are required to attend several didactic sessions on Tuesday and Thursday mornings, including: 1) Review of Clinical Psychiatry (Dr. Holden); 2) Humanistic Medicine (Dr. L. Hunt); 3) Alcoholism and Drug Abuse (Dr. Whitfield); 4) Patient Management (Dr. Balis); 5) Psychological Testing (Dr. Donner); 6) Introduction to Psychotherapy (Dr. Hatz); and 7) Liaison Seminar (Dr McClelland). In addition, some students are assigned to part-time experience in child psychiatry, one-half day per week. Students on a child psychiatry option have proportionally less time in adult services. (Dr. Sakles)

Institute of Psychiatry and Human Behavior. The clerkship involves a concurrent assignment to the adult in-patient division, ambulatory care division, and liaison psychiatry division. The in-patient experience is structured around the assumption of responsibility for the work-up and treatment of a newly admitted patient under the supervision of a ward administrator and a resident preceptor. The student participates in staff meetings, milieu therapy activities and, psychodrama sessions and presents the patient in a clinical case conference. The out-patient experience involves intensively supervised work with patients in the brief therapy clinic and open clinic supplemented by a student's clinical case conference. Concurrent liaison division activities include supervised work with patients in the general hospital. (Dr. Sakles)

Sheppard and Enoch Pratt Hospital. Three to four students per rotation. It focuses primarily on supervised work with hospitalized patients and includes participation in milieu therapy, group therapy and ongoing staff conferences. Students spend a portion of their time on a geriatric ward doing supervised evaluation. (Dr. Schultz)

Sinai Hospital. Two students per rotation. It involves a concurrent exposure to hospitalized psychiatric patients, consultative psychiatry, crisis clinic and out-patient clinic. Students also attend ongoing seminars and conferences, and spend a portion of their time at a geriatric facility doing supervised evaluations. (Dr. Urbaitis)

Wyman Park Health System. Two students per rotation. It combines in-patient and out-patient experience, and consultative psychiatry under close supervision. Students also attend ongoing conferences. Out-patient experience is provided at the North Baltimore Community Mental Health Center. (Dr. Culp)

Walter P. Carter Community Mental Health Center. Four students per rotation. It consists of assignments to emergency room, in-patient service and satellite clinics. University faculty and residents provide close supervision for the students. (Dr. Robinson)

Spring Grove Hospital Center. Three to four students per rotation. It consists of both in-patient and out-patient assignments. Students also attend ongoing seminars and conferences under the leadership of university faculty who supervise at Spring Grove. (Dr. Ferro)

Interdepartmental Collaborative Teaching. Behavioral science teaching in certain specialized areas is contributed by several departments, including the Department of Psychiatry, within the interdisciplinary sequence Introduction to Clinical Practice (ICP). In the clinical years, the Liaison Division of the Department of Psychiatry conducts collaborative teaching in surgery, medicine and ambulatory care. The Division of Child and Adolescent Psychiatry

collaborates closely in teaching, research and patient care with the Department of Pediatrics (Dr. Sarles). Core courses in Human Sexuality and Ethics are offered in the interdepartmental ICP sequence during the freshman and sophomore years.

Electives. The Department of Psychiatry offers elective courses in all four years of the medical curriculum. Elective courses scheduled in the Year I and Year II minimesters (January and June) span a variety of topics in behavioral sciences, including: human development, psychophysiology, medical sociology and anthropology, psychopharmacology, humanistic medicine, biological substrates of behavior, psychoanalytic theory and psychiatric epidemiology. Elective courses offered during the clinical years include: brief psychotherapy, psychiatry for the medical practitioner, community psychiatry, emergency psychiatry, out-patient child psychiatry, pediatric psychiatric consultation, preventive and community psychiatry courses in various research areas, as well as individual clinical preceptorships.

Combined Accelerated Program in Psychiatry (CAPP). The CAPP was initiated in 1970 by the Department of Psychiatry as a major effort to explore new approaches to medical education. This behavioral science-psychiatry track allows selected students to enroll concurrently in a basic psychiatric-specialty training, beginning in the freshman year and continuing through the four years of medical school. In addition to participating in the psychiatry program, students are required to fulfill all of the requirements of a standard four-year medical curriculum. In admitting students to the program, there is no requirement for any pledge of a career interest in psychiatry. Students are selected from among applicants with an interest in the social and behavioral aspects of medicine. Twelve students are admitted to the program per year. Currently, over 100 students have entered the program. The track provides, from the first month of the freshman year, an unfolding progression of combined didactic and clinical experiences in the behavioral sciences and in clinical psychiatry. The completion of this four-year program enables the student to graduate from medical school with a foundation of knowledge and skills at least equivalent to that provided by one year of traditional residency training in psychiatry. Students in the program graduate from the medical school six months earlier than the rest of their class by being credited six months elective time in psychiatry. During the remaining six months, those interested in careers other than psychiatry are encouraged to take a six-month internship in psychiatry specifically designed to meet their practice needs in the field of their choice. On the other hand, those committed to a career in psychiatry are encouraged to take a six-month internship in internal medicine. (Dr. Weintraub)

Fellowships.

This eight-week program, supported by the National Institute of Mental Health and medical school traineeships, is offered each summer to students. Students are assigned to the various clinical facilities of the Institute of Psychiatry and Human Behavior and affiliate hospitals. Students participate in an intensive program which includes closely supervised clinical work, conferences and seminars, and involvement in individual clinical and research projects. (Dr. Balis, Fellowships Coordinator)

Radiation Oncology

Professor and Chairman
Omar M. Salazar, MD
Associate Professor
George Harrison, PhD
Wilfred Sewchand, ScD
Medical School Associate Professor
Hipolito Poussin-Rosillo, MD
Robert G. Slawson, MD
Research Associate Professor
Hubert A. Eddy, PhD
George M. Samaras, PhD
Adjunct Associate Professor
Harry Berman, MD
Assistant Professor
Pradip Amin, MD
ELizabeth Balcer-Kubiczek, PhD
Robert E. Dryzmala, PhD
Maria C. Jacobs, MD
Vinita Patanaphan, MD
Medical School Assistant Professor
Roberta Strohl, RN, MN
Adjunct Assistant Professor
I. G. Emanuel, MB, BS
Marcos Tepper, MD
Instructor
Cengiz Aygun, MD
Diana Carbone, MS
Adjunct Clinical Instructor
James McCullough, MS
Research Associate
Warren E. Better, BA
Maryam Hedayati, MS
Duncan McCullouch, BS

The Department of Radiation Oncology is divided into six divisions: 1) Administration, 2) Clinical Radiation, 3) Clinical Physics, 4) Nursing, 5) Education, and 6) Radiation Research. They represent the different areas of interest within this specialty. All are closely interrelated to achieve improved management of the cancer patient.

The medical student is offered a broad exposure to oncology with emphasis on the principles of radiation oncology biology and physics through lectures, case presentations, demonstration and participation in New Patient and Follow-up Clinics. The use and indication of the different types of radiation are presented as well as the use of combined modality of the management of the cancer patient.

Research Interests

Departmental research efforts are focused upon many areas of oncology. The use of radiation as a systemic treatment agent, brachytherapy, hyperthermia, microcirculation of tumors and fractionation schemes represent several departmental research projects.

Undergraduate Medical Program

Third Year
During a three-week rotation through Radiology, Radiation Oncology and Nuclear Medicine, students will spend three days in Radiation Oncology. A series of lectures are given designed to familiarize them with the principles of the specialty. They will also attend other educational activities as well as clinics. (Dr. Poussin and staff)

Fourth Year
Elective in Radiation Therapy. Students interested in oncology, are offered an opportunity to participate as a member of the radiation oncology team. They will become familiar with the evaluation, management and follow-up of patients who have cancer. Included are treatment planning, dosimetry and the use of interstitial and intracavitary sources of radionuclides. (Dr. Poussin and staff)

Graduate Program

An approved three-year residency program in therapeutic radiology is offered at the University of Maryland Medical System. Teaching is carried out through didactic lectures, clinics and numerous teaching conferences with emphasis on patient care under the supervision of a full-time staff. Elective time is spent in related oncological specialties to promote the multidisciplinary concept of management of patients with cancer.

Rehabilitation Medicine

Associate Professor and Acting Chairman
Leon Reinstein, MD
Clinical Professor
B. Stanley Cohen, MD
Associate Professor
Lewis J. Goldfine, MD
George A. Lentz, Jr., MD
Kurt Raab, MD
Adjunct Associate Professor
Gerald Felsenthal, MD
Assistant Professor
Christine B. Feliciano, MD
Alicia E. Quiroga, MD
Norman B. Rosen, MD
Henry Spindler, MD
Adjunct Assistant Professor
Inder Chawla, MD
Martin Z. Kanner, MD
Mark A. Reischer, MD
Clinical Assistant Professor
Frederick J. Balsam, MD
Annamaria G. Basili, PhD
Sonia Estruch, MD
Tai-San Huang, MD
Research Assistant Professor
Jerome V. Danoff, PhD
Instructor
Charles Dankmeyer, Jr., BS
Dorothy Shannon, PhD
Thomas Weiss, PhD

Rehabilitation Medicine is the diagnosis, treatment and rehabilitation of neuromusculoskeletal and other system disorders which produce physical disability. The Department of Rehabilitation Medicine is commited to the education of medical students and resident physicians in the specialty of Physical Medicine and Rehabilitation and the provision of the highest quality of medical care to rehabilitation patients.

Undergraduate Medical Program

Because patients who require rehabilitation services come from many diverse medical and surgical specialties, the department seeks to provide each graduating medical student of the University of Maryland School of Medicine with a basic knowledge and understanding of Physical Medicine and Rehabilitation.

The department participates in several interdepartmental courses including Correlative Medicine in Physiology in the freshman year and Ambulatory Care in the senior year. Elective clerkships in clinical rehabilitation medicine are offered in the sophomore, junior and senior years at the University of Maryland Medical System and Montebello Rehabilitation Center.

Graduate Program

An approved three-year residency program in physical medicine and rehabilitation is offered for those physicians wishing to specialize in this field. A typical program would include electromyography, ambulatory clinics and consultations at University of Maryland Medical System, as well as rehabilitation medicine, spinal cord injury and head injury bed services at Montebello Rehabilitation Center. These clinical experiences are supplemented by weekly kinesiology and electromyography case presentations, twice monthly resident seminars and monthly grand rounds and journal club. All faculty members and residents contribute their knowledge, skills and experience in patient care, teaching and research. All faculty members and residents actively participate in teaching rounds, seminars and conferences. Education and patient care are indivisible.

Surgery

Professor and Chairman
Joseph S. McLaughlin, MD

The Department of Surgery is composed of six divisions: general surgery, neurosurgery, orthopaedics, otolaryngology, thoracic and cardiovascular, and urology. The faculty of the various divisions participate in the teaching of anatomy, pharmacology, physiology and introduction to clinical medicine, but do not offer formal courses until students enter their clinical clerkships. During this 12-week period, time is divided between general surgery and the subspecialities of orthopaedics, otolaryngology, and urology. Students may have clerkships at the University of Maryland Medical System or at one or more affiliated hospitals (Mercy, Maryland General, St. Agnes, South Baltimore General).

Electives in surgical research and summer fellowships are available to students in all four years. More extensive clinical experience with greater patient responsibility is offered by all divisions to students as electives in their fourth year.

The surgical clerkships expose the student to disease entities which can or should be treated by operative intervention and to the physiologic and metabolic consequences of such intervention. Students learn to recognize conditions which will require surgical consultation. They gain an appreciation of wound care as well as familiarity with basic emergency procedures. This should enable the future internist, pediatrician or psychiatrist to discuss with his patient the probable treatment and prognosis of various surgical diseases, as well as to give students the opportunity to explore various surgical disciplines and to participate fully in the daily activities of surgical teams.

Graduates of approved medical schools will be considered for residencies in general surgery, neurological surgery, orthopaedics, otolaryngology, thoracic and cardiovascular, and urologic surgery.

DIVISION OF GENERAL SURGERY

Professor and Head
H. Harlan Stone, MD, PhD

Professor Emeritus
Harry C. Hull, MD
George Yeager, MD

Professor
Paul B. Chretien, MD
Fuad J. Dagher, MD
E. George Elias, MD, PhD
J. Laurance Hill, MD
John H. Siegel, MD

Clinical Professor
Calvin Ernst, MD
Alex J. Haller, Jr., MD
T. Brannon Hubbard, Jr., MD
G. Melville Williams, MD

Adjunct Professor
Bimal C. Ghosh, MD

Associate Professor
Elliott M. Badder, MD
Mukund S. Didolkar, MD
Luis A. Queral, MD
William P. Reed, MD
William A. Scovill, MD
Medical School Associate Professor
Kristin Stueber, MD
Adjunct Associate Professor
Andrew Munster, MD
Clinical Associate Professor
Everard D. Cox, MD
David L. Dudgeon, MD
Thomas R. Gadacz, MD
Neil Novin, MD
Baekhyo Shin, MD
Everett K. Spees, MD
Assistant Professor
Ruben F. Ballesteros, MD
James F. Burdick, MD
Donna A. Caniano, MD
Francis A. Clark, Jr., MD
Graham Fallon, MD
Nelson H. Goldberg, MD
Elizabeth Hilliker, MD
Darrel A. Jaques, MD
Karl F. Mech, Sr., MD
Joseph Orlando, MD
John A. Singer, MD
Robert Spence, MD
Sullins G. Sullivan, MD
Vesna Tomazic, PhD
Hans R. Wilhelmsen, MD
Medical School Assistant Professor
Alasdair K. Conn, MD
Nelson L. Garnett, DVM
William D. Lynn, MD
Philip R. Militello, MD
Roy A. M. Myers, MD
Aurelio Rodriguez, MD
Carl Soderstrom, MD
Charles Wiles, MD
Clinical Assistant Professor
Sheldon Brotman, MD
James R. Buck, MD
Alexander P. Cadoux, MD
Donald D. Coker, MD
James H. French, Jr., MD
René Gelber, MD
Herbert E. Gladen, MD
Alexander M. Guba, Jr., MD
Richard M. Hirata, MD
Stanley L. Minken, MD
Sidney S. Mir, MD
William B. Rever, Jr., MD
John R. Saunders, Jr., MD
Adam Szczypinski, MD
Edmund C. Tortolani, MD
Adjunct Assistant Professor
Robert W. Rout, MD
Instructor
William H. Bouchelle, MD
Raymond M. Cunningham, MD
Salvatore J. DeMarco III, MD
Gregory M. Hall, MD
Arthur R. Jasion, MD
August D. King, Jr., MD
Sheldon H. Lerman, MD
Bruce G. Lowman, MD
Jerome Plasse, MD
Harold Ramsey, MD
Anthony J. Raneri, MD
William F. Sindelar, MD
Elizabeth L. Tso, MD
Robert S. Wilensky, MD
Clinical Instructor
Carl M. Dunham, MD
David R. Gens, MD
Ameen I. Ramzy, MD
Associate
William G. Arminger, MD
Elie J. Fraiji, MD
Moises Fraiman, MD
Dennis Franks, MD
Roger L. Gordon, MD
Larry Leonard, MD
William L. Macon IV, MD
Paul N. Manson, MD
George J. Mehler, MD
Constantine J. Padussis, MD
Joseph Romolo, MD
David S. Shear, MD
Edwin H. Stewart, MD

Undergraduate Medical Program

Third Year

GSUR 530. The teaching of general surgery is conducted in the in-patient environment of the University of Maryland Medical System, Baltimore Veterans Administration Medical Center, Maryland General and Mercy Hospitals. Students are divided into groups of two or three for continuous assignment to individual patient areas. Upon admission to the service, selected patients are assigned to individual students who are expected to record a complete history, the results of a physical examination and required laboratory studies. A differential diagnosis, final diagnosis and recommendations for therapy must be included. Operation room participation is encouraged but not required.

The program is designed to give the student a broad overview of the fundamentals of the discipline of surgery in a clinical environment and includes contact with a wide variety of adult and pediatric patients. This includes patients with infections, neoplasms, trauma, endocrine disorders, vascular disease, gastrointestinal problems, metabolic disorders and congenital defects often requiring extensive medical evaluation followed usually by surgical therapy.

The student is responsible for core reading material which is identical regardless of hospital assignment. Emphasis throughout the course is placed on problem solving through correlation of basic science information with clinical diagnosis and management. Attendance is required at formal lectures given twice weekly. Final evaluation is based upon clinical performance on the various services assigned, as well as special examination provided by the National Board of Medical Examiners.

Fourth Year

GSUR 541. Elective Clerkships. Students participate as integral members of a surgical care team. They are assigned to various services at the University of Maryland Medical System in surgical intensive care, emergency medicine, plastic surgery and cardio-thoracic surgery.

Surgical ward clerkships are also available at the following affiliated hospitals: St. Agnes, Prince George's General and York (Pa.).

At York (Pa.) Hospital, electives are offered in the surgical emergency room and plastic and reconstructive surgery.

Consult the medical school electives catalog for course details.

Graduate and Postgraduate Programs

A fully-accredited residency is offered at the University of Maryland Hospital and one affiliated hospital, Mercy. Additionally, research fellowships are available; and, for the practicing physician, short refresher courses are given.

DIVISION OF NEUROLOGICAL SURGERY

Professor and Head
Michael Salcman, MD

Professor Emeritus
James G. Arnold, MD

Clinical Professor
Robert M. N. Crosby, MD
Thomas B. Ducker, MD, FACS
William H. Mosberg, Jr., MD
Raymond K. Thomas, MD

Clinical Associate Professor
Jane M. Matjasko, MD

Assistant Professor
Walker L. Robinson, MD
G. Lee Russo, MD
John O. Sharrett, MD
Israel H. Weiner, MD

Medical School Assistant Professor
Fred H. Geisler, MD, PhD

Clinical Assistant Professor
Charles M. Henderson, MD
Charles J. Lancelotta, MD
Joseph A. Soliman, MD

Instructor

Douglas J. Abbott, MD
Hatem S. Abdo, MD
Edwin H. Bellis, MD
David Cook, MD
Robert G. Hennessy, MD
Joseph K. Jamaris, MD
Edward L. Layne, MD
Paul D. Meyer, MD
Jorge R. Ordonez, MD
Arun B. Sapre, MD
Panayiotis L. Sitaras, MD
Fred N. Sugar, MD

Undergraduate Medical Program

First and Second Years

In the first year, the staff participates in a combined program with the Department of Neurology in which correlative lectures and demonstrations are given and the fundamentals of the neurological examination are demonstrated. During the second year there is a similar program that allows students to examine patients, followed by faculty review.

Third Year

In the third year, each student spends three weeks on a combined medical and surgical neurology rotation in which lectures are combined with clinical experiences gained on the two services. Opportunities are provided for observing neurosurgical procedures and participating in all the functions of the service.

Fourth Year

A fourth-year elective is available in clinical neurosurgery. The participation of the student is increased, both in the operating room and in the daily performance of patient care.

In all years, opportunities are available to participate in the neuro-oncology research laboratories in the areas of model brain tumors, tissue culture, microwave hyperthermia and chemotherapy. A preceptorship in pediatric neurosurgery is also available. Students interested in microneurosurgery, the pathophysiology of spinal trauma and neurophysiology are welcome in the other research laboratories of the division.

Graduate Program

Rotations are offered to general surgery residents from the university and affiliated hospitals. A training program in neurological surgery is offered to graduates of accredited medical schools who have completed one year of surgical residency. The five-year program is accredited by the American Board of Neurological Surgery. Fellowships are available in neuro-oncology and neuro-trauma.

DIVISION OF ORTHOPAEDIC SURGERY

Professor and Head

John E. Kenzora, MD

Associate Professor

Robert W. Bright, MD
Liebe S. Diamond, MD
Howard D. Dorfman, MD
Charles C. Edwards, MD
Roger H. Michael, MD
Gerhard Schmeisser, MD

Clinical Associate Professor

Robert C. Abrams, MD
John J. Tansey, MD
Robert E. Zadek, MD

Adjunct Associate Professor

Youngil Youm, PhD

Assistant Professor

Larry Becker, MD
Andrew R. Burgess, MD
J. Scott Decker, MD
Michael A. Ellis, MD
Thomas Gillespie, MD
George H. Greenstein, MD
Homer C. House, MD
Alan M. Levine, MD
Jerome P. Reichmister, MD
W. Haddox Sothoron, MD
Edward Wenzlaff, MD

Clinical Assistant Professor
William H. Baugher, MD
Stanley Friedler, MD
Instructor
Lawrence Blumberg, MD
Joseph A. Ciotola, MD
Edward R. Cohen, MD
Leo A. Courtney, MD
Jivaka B. DeSilva, MD
Donald B. Haskins, MD
Michael Jaworski, MD
James C. Murphy, MD
George Ritchie, MD
William I. Smulyan, MD
Kenneth F. Spence, MD
Jack L. Wapner, MD
Thomas V. Whitten, MD
Stuart Winakur, MD
Clinical Instructor
Shelton C. Simmons, III, MD
Clinical Associate
Robert J. Brumback, MD
Wayne B. Leadbetter, MD
Marc Lenet, DPM
Michael Sherman, DPM

Undergraduate Medical Program

First and Second Year

Electives. Freshmen or sophomore medical students may develop minimester electives in clinical orthopaedics or musculoskeletal research with individual members of the orthopaedic surgical faculty. Projects include anatomic dissections with research or clinical value, participation in ongoing projects at the Maryland Orthopaedic Research Laboratories, or clinical experiences emphasizing joint reconstruction, major trauma, or other disorders of the musculoskeletal system.

In addition to these electives, the Division of Orthopaedic Surgery provides a lecture series for students in conjunction with the Introduction to Clinical Practice program.

Third Year

OSUR 530. Orthopaedic Surgery: University of Maryland Medical System. The general principles of orthopaedic surgery are taught and medical students are introduced to fracture recognition and management, reconstructive surgery of the musculoskeletal system, and to common out-patient conditions affecting the musculoskeletal system. Under supervision, they participate in patient diagnosis and treatment as well as surgery. Daily student conferences and didactic sessions are held in addition to the division's intensive academic program.

Orthopaedic Surgery: Affiliated Hospitals. A clinically-oriented course in the principles and techniques of orthopaedic surgery is offered under the direction of the full-time University of Maryland Orthopaedic Surgery faculty at Kernan's Hospital for Crippled Children, and Sinai Hospital of Baltimore.

Fourth Year

Electives. One senior student is selected each month for an internship-level clinical and surgical experience on each of the services listed below. Students are encouraged to participate in the 10 weekly orthopaedic conferences and seminars at University of Maryland Medical System. Each of the senior electives is under the direction of an on-site full-time member of the orthopaedic faculty. A maximum of four senior students may take a senior elective during any one month.

University Teaching Service Electives (UMMS) (2)
Major Trauma and Spinal Injury Service Elective (MIEMSS) (1)
Kernan Hospital for Crippled Children Elective (1)

Graduate Programs

The Division of Orthopaedic Surgery offers an accredited four-year residency program. Clinical and surgical experiences are achieved on the teaching, private, and foot and hand services in the University of Maryland Medical System, the major trauma and spinal injury services in the Maryland Institute for Emergency Medicine, the pediatric orthopaedic service at Kernan Hospital and the orthopaedic services at St. Agnes Hospital, Sinai Hospital and Montebello Rehabilitation Center. An intensive academic program and research involvement for every resident complement this clinical experience.

DIVISION OF OTOLARYNGOLOGY

Professor and Head
Cyrus L. Blanchard, MD

Medical School Associate Professor
William C. Gray, MD

Clinical Associate Professor
Regina L. Cicci, MD
Margaret M. Fletcher, MD

Assistant Professor
Albert Steiner, MD
Charles M. Suter, PhD

Clinical Assistant Professor
Dole P. Baker, MD
Franklin M. Bialostozky, MS
John F. Biedlingmaier, MD
Enzo Cosentino, MD
Hubert Leveque, MD
Edward N. Nachlas, MD

Instructor
Steward Adam, MD
Stanley Blum, MD
Milton L. Engnoth, MD
Suzanne Florin, MA
Madeline J. Fox, MS
Susan G. Gold, MS
Barry E. Ominsky, MD
Juan Pardo, MD
Varah Vorasubin, MD

Clinical Instructor
Thomas J. Toner, Jr., BA

Clinical Associate
Jong H. Won, MD

The division provides an introduction to the diseases of the head and neck. A wealth of opportunity is provided to the student who will be concerned with communication disability and the clinical diseases where hearing, speech and language are of diagnostic significance.

The staff, with the assistance of the postdoctoral trainees, provide each student by example, lecture and direct tutorial instruction, the essentials with which to enter residency in such fields as family practice, pediatrics, general surgery, neurosurgery, neurology, psychiatry and otolaryngology.

Undergraduate Medical Program

Third Year

Third year students are introduced to the care of patients with diseases of the ears, nose and throat. One hour of auditory physiology and one hour of basic audiological technique is presented to each group by an audiologist. One hour of introductory speech pathology is presented by a speech pathologist one hour of electronystagmography is presented by a nystagmographer.

Fundamental elements of otolaryngologic diagnosis and therapy are stressed in this program of approximately 14 days.

Fourth Year

Electives. Electives are offered in the following areas: basic clinical otolaryngology, advanced otolaryngology, communication disorders, investigation in otolaryngology, physiology of hearing and surgical otolaryngology. For detailed course descriptions, consult the medical school electives catalog.

Graduate Program

Resident training in otolaryngology is open to three residents in each of the four years of this American Board of Otolaryngology-approved program. The program is currently accredited by the Accreditation Council for Graduate Medical Education.

DIVISION OF THORACIC AND CARDIOVASCULAR SURGERY

Professor and Head

Joseph S. McLaughlin, MD

Professor

Sufuh Attar, MD
R. Adams Cowley, MD
David C. Green, MD
John R. Hankins, MD

Associate Professor

John F. Miller, MD
Anthony L. Moulton, MD
Stephen Turney, MD

Assistant Professor

Alejandro J. Sequeira, MD

Instructor

Fred N. Cole, MD
Karl F. Mech, Jr., MD

Associate

Ferdinand S. Leacock, MD

Undergraduate Medical Program

Fourth Year

TSUR 541. Externship in Thoracic Surgery Elective. The main purpose is to present, in a clinical setting, the basic pathophysiological principles of thoracic and cardiovascular surgery, a highly specialized and demanding discipline. The student becomes a member of one of the teams on the service and serves in the capacity of an intern. Duration of the course is four weeks with a maximum of 12 weeks available.

Graduate Program

The two-year residency program which admits one trainee each year is approved by the American Board of Thoracic Surgery. Applicants must be eligible for the American Board of Surgery examination at the start of the program. Residents are given an opportunity to assist and then perform all types of cardiothoracic operative procedures, including cardiopulmonary bypass, in a program designed to ensure progressive experience.

DIVISION OF UROLOGY

Professor and Head
John D. Young, Jr., MD
Adjunct Professor
Robert D. Jeffs, MD
Clinical Professor
Nasser Javadpour, MD
Medical School Associate Professor
Nasir Bashirelahi, PhD
Edward W. Campbell, Jr., MD
Clinical Associate Professor
Stephen P. Cohen, MD
Earl P. Galleher, MD
Assistant Professor
Bruce W. Berger, MD
Louis C. Breschi, MD
Robert L. Doyle, MD
Suhayl S. Kalash, MD
Howard B. Mays, MD
Louis A. Shpritz, MD
Clinical Assistant Professor
Joel. M. Cherry, MD
Instructor
Frederick G. Bergmann, MD
Ray Brodie, Jr., MD
Stephen M. Busky, MD
Anand Dhanda, MD
Edwin S. Epstein, MD
Robert B. Goldstein, MD
Ira E. Hantman, MD
Gary F. Harne, MD
David S. McHold, MD
Shashikant Patel, MD
Harvey N. Schonwald, MD
Anthony O. Sclama, MD
Kofi E. Shaw-Taylor, MD
Harry W. Smith, MD
Harry S. Stevens, MD
Chawalt Suddhimondala, MD

The urologic curriculum is designed to introduce urologic principles as they relate to preservation of good health through maximum renal function, normal urine storage and transport, an acceptable voiding pattern, treatment and prevention of urinary infection, identification and management of neoplasm in the urinary tract and male reproductive system and management of urolithiasis in both sexes. Instruction is also given on disorders of the male reproductive tract including neoplasms, infertility and distrubance in sexual function.

Third Year

USUR 530. Junior Clerkship. Five to seven students are assigned to the division for 14 days at the University of Maryland Medical System. Each is asked to review and follow a patient with a different urologic problem and to present this patient to the group and a faculty member. Daily rounds and conferences are held. The students observe and participate in diagnostic and operative procedures and attend the out-patient clinic. Each student receives a list of study questions, some of which are reviewed at faculty sessions each day. Outlines for each of the nine lectures are given to each student.

Fourth Year

Electives. Students may elect an externship in urology at University of Maryland Medical System or Sinai Hospital.

Graduate Program

The residency program consists of three years following two prerequisite years of training, one of which must be in general surgery. Each year, three are appointed and become co-residents at the end of the third year if progress in training has been satisfactory.

MEDICAL TECHNOLOGY PROGRAM

The Profession

Medical technologists integrate and apply concepts of biology, chemistry and medicine to the clinical laboratory sciences. They use their knowledge and skills to supervise and perform complex laboratory procedures, the results of which are crucial for the diagnosis of disease, the proper management of patient therapy and the maintenance of health programs. As professionals, medical technologists are conscientious, flexible, interested in helping others and willing to accept responsibility for human life in the practice of medicine. They are individuals possessing both intellectual and technical skills.

Excellent employment opportunities exist in a wide range of settings and the growth in a number of public and private health care facilities as well as the initiation of new governmental health programs have created a need for qualified medical technologists. In fact, the Bureau of Labor Statistics estimates a 40% growth in employment in the clinical laboratory sciences by 1995. To date, graduates of the University of Maryland Medical Technology Program have found challenging careers in settings ranging from hospital/government/industrial clinical laboratories to academic/industrial research laboratories as well as in sales and technical services in industry and education.

The Program

The Medical Technology Program is a program within the University of Maryland School of Medicine. As such it is located at the University of Maryland at Baltimore (UMAB), the university's professional schools campus in downtown Baltimore.

One of the four campuses in the University of Maryland system, this 36-acre campus houses the Schools of Dentistry, Law, Medicine, Nursing, Pharmacy, and Social Work and Community Planning as well as an interdisciplinary Graduate School. The University of Maryland Medical System and the Maryland Institute for Emergency Medical Services Systems are also located on this campus. As a component of this large academic health center, the Medical Technology Program offers students a unique opportunity to participate in a stimulating medical environment while preparing for a career in the clinical laboratory sciences.

The UMAB Medical Technology Program offers its students unique features that differentiate it from many other medical technology programs. They are:

1. Formal admission into the program guarantees the student a position in a clinical internship. A student applying during the sophomore year is guaranteed a space in clinical rotation in the senior year following satisfactory completion of prerequisites.
2. Didactic education is expanded from six months to 12 months without sacrificing the length of clinical training.
3. Introductory level courses are offered followed by advanced courses, thus enabling each student to build on previous knowledge.
4. Students attending two-year institutions may transfer directly into UMAB without enrolling in an interim institution for a third year of study.
5. Basic general education requirements may be earned at virtually any regionally accredited college or university.
6. Students become involved with practicing technologists early in their academic careers.
7. Employment and placement opportunities are expanded due to the number of clinical sites affiliated with the university.
8. There is a low faculty:student ratio of 1:6

9. There are special programs designed to meet the needs of specific student populations. These include tutorial assistance, orientation sessions, advisory systems such as the Big Brother/Big Sister program and the innovative "3 for 2" program for students who wish to pursue the curriculum at a slower pace.

Students complete two years of preprofessional course work prior to the beginning of their studies at UMAB. During their two years in the professional curriculum, they are trained in the latest scientific techniques such as immunoassay and computer-interfaced methodologies thus developing competence in the use of high-tech instrumentation. The student learns to interpret the significance of laboratory results with respect to health and disease.

The rapidly increasing sophistication of the technologies employed in the laboratory setting has created a demand for individuals with extensive preparation both in the theoretical and applied aspects of laboratory science. Therefore, the curriculum insures that students acquire uniformly strong backgrounds in important technical concepts and procedures. Yet it also provides students the opportunity to obtain a broad liberal arts background.

The City

At the University of Maryland at Baltimore, students are within walking distance of landmarks such as the Inner Harbor, Fort McHenry, Edgar Allan Poe's home and Babe Ruth's birthplace. Equally attractive to students are the numerous restaurants and eateries which represent some of Baltimore's finest ethnic cuisines. The significant renovations to the historical areas surrounding the campus have also provided students the opportunity to enjoy comfortable living accommodations close to the campus.

Baltimore, the nation's fourth largest seaport, combines the sophistication and culture of a metropolitan city with the beauty and recreational life of the waterfront and surrounding rural areas. Recent strides in urban revitalization have brought national attention to Baltimore's Harborplace, the Aquarium, Memorial Stadium, Charles Center, Lexington Market and the Fell's Point area.

Baltimore is easily accessible from the New York and Philadelphia areas as well as from southern points such as Richmond via Interstate 95. Mass transit including buses and the metro system operate throughout the city. Travel outside the city is available by rail (Penn Station) and air (Baltimore-Washington International Airport).

Accreditation

The University of Maryland School of Medicine, through the Medical Technology Program, offers a baccalaureate degree in medical technology. The program fulfills requirements set forth by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) and the Committee on Allied Health Education and Accreditation (CAHEA) on behalf of the American Medical Association (AMA).

Students who are accepted into the program complete their junior and senior years at the School of Medicine, University of Maryland at Baltimore. Upon successful completion of the program, graduates are eligible to take national certification examinations given by professional organizations including ASCP, NCA and AMT.

Clinical Affiliations

Students must complete at least 60 semester hours of academic preparation, exclusive of health and physical education, before beginning the professional segment of the Medical Technology Program. The following curriculum guide, which fulfills University of Maryland and National Accrediting Agency for Clinical Laboratory Sciences requirements, will assist the student in planning the first two years of study. This guide allows flexibility should the student choose to pursue an alternative career plan. The Medical Technology Program has designated articulation with community and state colleges within Maryland whereby courses are predetermined as transferable. An articulation publication is available in the counseling center of each community college.

Preprofessional Requirements

A. Chemistry (4 approved chemistry courses to total a mininum of 16 semester hours) to include:
Inorganic chemistry with laboratory
Organic chemistry with laboratory
Select additional courses from the following:
Biochemistry
Analytical chemistry with laboratory
Quantitative analysis with laboratory
Physical chemistry with laboratory

B. Biology (8 semester hours)
General biology with laboratory required (4)
General microbiology with laboratory required (4)

NOTE: Anatomy and physiology, pathogenic microbiology, and immunology are a portion of the junior year of the Medical Technology Program and should not be taken prior to admission. These courses are not transferable to the program.

C. Mathematics (6 semester hours)
Introductory college math (3, 3)
or
Introductory college math (3) and statistics (3 or 4)
or
Precalculus (3 or 4) and statistics (3 or 4)
or
Calculus (3 or 4)

D. Arts and Humanities (12 semester hours)
English (6) - one course must be composition
Speech (3)
Select an additional three hours from arts and humanities

NOTE: Credit for foreign language will be given only upon completion either of the first elementary year or of an advanced course.

E. Behavioral and Social Sciences (6 semester hours)
Select six hours from approved behavioral and social sciences.

F. Electives (to complete the 60 semester hour requirement) Recommended: computer science, philosophy, literature, psychology, sociology, physics, genetics, comparative vertebrate morphology, cellular biology.

NOTE: If science courses were taken more than seven years prior to admission, a recent course in microbiology or biochemistry must be taken.

Health and physical education are not applicable to the 60-semester-hour requirement. All electives must have advisor approval.

Prospective applicants with credits from foreign educational institutions must have their credentials evaluated by the Credentials Evaluation Service, P.O. Box 24679, Los Angeles, California 90024. Students should begin this evaluation process well before applying to UMAB since the process may take several months to complete.

Professional Curriculum

The professional segment of the program is administered by the University of Maryland School of Medicine on the Baltimore campus. Students are accepted into the Medical Technology Program on a competitive basis. Successful completion of 60 semester hours does not guarantee admission to the professional segment of the program.

New students are admitted during the spring to begin coursework in the fall of each year as juniors. Students register for coursework during the fall, winter and spring semesters of both the junior and senior years. The junior year consists of a traditional academic-type schedule. During the winter and spring of the senior year, the student will register for clinical rotation courses which provide experience in actual hospital clinical laboratories. The clinical facilities used in teaching programs of the School of Medicine are numerous and varied in order to offer a broad spectrum of opportunities. Currently the program affiliates with over 12 hospitals in the Baltimore and Washington metropolitan areas as well as with a few hospitals in the more rural areas of the state of Maryland. Students rotate in more than one hospital setting in order to obtain a variety of laboratory experiences. Transportation, meals and lodging are responsibilities of the student.

Academic Policies

The university authorities reserve the right to make changes in the curriculum, in the requirements for advancement and graduation, in fees and in rules and regulations whenever appropriate. Students will be supplied with the Procedures and Policies of the Medical Technology Program and the Judicial Procedures prior to registration and orientation. Students must agree to abide by all policies and procedures established in these documents.

Advancement

Each student must satisfactorily complete the designated Medical Technology Program requirements with a cumulative grade point average of 2.0 or above in order to obtain a baccalaureate degree. In addition, the student must earn the grade of "C" or better in each didactic course in the senior year and must earn a 2.0 average in each discipline in order to advance to the clinical rotations. Admission into the junior year and successful completion of program requirements guarantees the student a position in the clinical rotation.

Dismissal

The program director, upon recommendation of the Advancement Committee of the Medical Technology Program, reserves the right to request the Dean of the School of Medicine to dismiss a student from the university for failure to meet academic requirements, for infractions of university rules, for infraction of departmental rules or for physical health, mental health or behavioral patterns that are incompatible with the demands of the profession of medical technology. A student who is dismissed may submit a written request for readmission to the dean.

A complete listing of the policies and procedures of the Medical Technology Program is contained in the program's publication entitled "Policies for Medical Technology Students."

Admission Policies

Applicants must meet all admission requirements of the University of Maryland. At least three years of college preparatory mathematics and science, including chemistry and physics, are strongly recommended at the secondary level.

Applications to the professional school will not be considered until the student has completed the first semester of the sophomore year or equivalent. To be eligible for consideration, applicants must have a 2.0 overall grade point average as well as a 2.0 grade point average in their science/math courses. Applicants should take the Allied Health Professions Admissions Test (AHPAT) to improve their admission status. All applicants must submit an Undergraduate Professional Application for Admission. Applications are available from The Office of Admissions and Registrations, University of Maryland at Baltimore, Room 326, Baltimore Student Union, 621 West Lombard Street, Baltimore, Maryland 21201. The deadline for application is February 15. Applications will be accepted after

that point, but admission consideration is not guaranteed.

Official Transcripts

1. Applicants must submit official copies of all college transcripts. Request official transcripts at the time of application for admission and have them sent to the academic coordinator.
2. Foreign students should request "Special Instructions for Foreign Students" from the academic coordinator.

Application Procedures

Applicants must comply with the following procedures:

1. Submit transcripts and a list of courses in progress at the time of application.
2. Supply supplementary information as requested by the Admissions Committee of the program.
3. Schedule an admissions interview prior to admission.
4. Submit results of the Allied Health Professions Admissions Test. For test dates and application deadlines, see your counselor or write to: The Psychological Corporation, 304 East 45th Street, New York, New York 10017.
5. Supply three letters of recommendation.
6. Submit a black and white passport type photograph to the academic coordinator (optional).
7. Mail above items directly to:
   Academic Coordinator
   Medical Technology Program
   University of Maryland School of Medicine
   Room 603, Allied Health Professions Building
   32 South Greene Street
   Baltimore, Maryland 21201

Admission decisions will be made by the Medical Technology Admissions Committee only after:

1. Transcripts and necessary supporting documents are on file in the Admissions Office.
2. The Admissions Committee has received the information requested above.
3. The student has appeared for an interview.

Acceptance

Selection of applicants is based on successful completion of preprofessional courses and requirements; AHPAT scores (if applicable); academic performance; and submission of supplementary information and three letters of recommendation. Each student should visit the program prior to final admission. The Medical Technology Program is accredited to accept 60 students for the junior year; however, actual enrollment may be limited by the number of spaces available in the clinical affiliations. Admission decisions are made each spring and classes begin for accepted students the following fall.

Prior to final acceptance, each student must undergo a physical examination. The examination may be performed by Campus Health Services (free of charge) or by the student's private physician. Physicals should be scheduled with Campus Health Services (528-6790) during the summer prior to fall registration. If the examination is to be performed by a private physician, contact Campus Health Services to obtain the authorized forms.

Equal Opportunity

The University of Maryland, in all its branches and divisions, subscribes to a policy of equal education opportunity for men and women of all races, creeds and ethnic origins. The school has the objective of securing a broad racial, sexual and ethnic balance in its enrollment.

Financial Information

1984 - 1985 Tuition and Fees

	Summer	*Fall Semester*	*Spring Semester*
Matriculation Fee (new students)		$ 20.00	$ 20.00
Tuition: In-State		578.00	578.00
Tuition: Out-of-State		1,854.00	1,854.00
Tuition: Part-time per credit (8 or less)		68.00	68.00
Supporting Facilities Fee (full-time)		60.00	60.00
Summer (biochemistry)	$20.00		
Instructional Resources Fee (full-time)		23.00	23.00
Student Health Fee (full-time)		25.00	25.00
Summer (biochemistry)	$12.50		
Student Liability Insurance		17.65	—
Student Activities Fee (full- and part-time)		7.50	7.50
Hospitalization Insurance*			
One person		277.87	277.87
Two persons		596.14	596.14
Family		621.04	621.04
Student Dormitory Fee		830.00	830.00
Graduation Fee (Seniors)			20.00
Late Registration Fee		25.00	25.00
Change of Fee		10.00	10.00
Student Government Association Fee		3.00	3.00

**The University Insurance Program or equivalent is required of all full-time professional school students in addition to the Student Health Fee. Students with equivalent insurance coverage must provide proof of such membership to his or her dean at the time of registration in order to obtain a hospitalization waiver form to present to the registrar.*

NOTE: The university reserves the right to make changes in fees and charges without prior announcement.

Satisfactory settlement or agreement for settlement of tuition and fees must be made with the Business Office within 10 days after payment is due. If settlement or an agreement for settlement has not been made within this time period, the student will be automatically barred from attendance at classes and will forfeit the other privileges of the Medical Technology Program and the School of Medicine.

Withdrawal and Refunds

Students who choose to leave the Medical Technology Program at any time during the academic year must file a letter of resignation with the program director. In addition, an Application for Withdrawal Form, bearing the proper signatures, must be filed with the Office of the Registrar. Students must satisfy the authorities that they have no outstanding obligations to the school and return their student identification card.

The date used in computing refunds is the date on which the application for withdrawal form is signed by the program director. Students officially withdrawing from the school will be credited for all academic fees charged to them less the matriculation fee, in accordance with the following schedule from the date instruction begins:

Two weeks or less	80 percent
Two to three weeks	60 percent
Three to four weeks	40 percent
Four to five weeks	20 percent
After five weeks	0 percent

Financial Aid

The University of Maryland School of Medicine's financial aid program is available for students who demonstrate financial need. Through a varying combination of grants, scholarships, long and short term loans, and part-time employment, students may receive assistance in meeting educational expenses. In addition to the school resources, outside funding agencies make financial assistance available to qualified students. For information on financial aid contact:

Student Financial Aid Office
University of Maryland at Baltimore
Baltimore Student Union
621 West Lombard Street
Baltimore, Maryland 21201

Students are urged to file early so as not to miss any deadlines.

Housing

The University of Maryland at Baltimore offers both apartment and dormitory style accommodations for students. For information contact:

Division of Residence Life
University of Maryland at Baltimore
Baltimore Student Union
621 West Lombard Street
Baltimore, Maryland 21201

Undergraduate Medical Technology Courses

Summer.

MEDT 350. Introduction to Biochemistry (4). This course is offered to students who need to meet the biochemistry requirement for admission prior to beginning the fall session as a junior in the Medical Technology Program. It is designed to introduce the student to basic biochemical concepts. Topics include: a review of basic chemical principles such as units, pH, equilibria, Henderson-Hasselbach equation, and stoichiometry application to biochemical quantitation; properties, function and metabolism of carbohydrates, lipids, nucleotides, amino acids and proteins; and enzyme kinetics. Biochemical quantitation is emphasized throughout the course with examples and problem solving sessions. Prerequisites: Inorganic and Organic Chemistry.

Junior Year Curriculum

Fall and Winter Semesters

MEDT 301 and MEDT 302. Laboratory Organization and Management (1, 1). An overview of the medical technology profession is provided including the accreditation, licensure and certifying procedures. Laboratory safety is stressed. Students are introduced to the processes of management as well as to the role of the supervisor in personnel, budgeting, teaching, and laboratory safety and regulations. An introduction to the use of the computer in the clinical laboratory is presented. Professional responsibility and ethics are integrated throughout MEDT 301 and MEDT 302.

MANA 311-312. Anatomy and Physiology I and II (4, 4). An understanding of the human body and its behavior is developed and a sound background in embryology, morphology and elementary pathobiology is provided. This course covers homeostasis and mechanisms that maintain it. The first course focuses upon anatomy and physiology at the cellular and tissue levels. The second course involves the functional anatomy of organs and systems. Emphasis is placed on the interrelationships of all parts of the body. Appropriate laboratories are incorporated into the sequence. Prerequisite: General Biology or General Zoology.

MEDT 321. Clinical Microscopy (2). The emerging technologist is introduced to the uses of compound microscopy and microscopic study of all formed elements found in body fluid in normal and abnormal states. Methods of examination include the use of light, phase, darkfield, fluorescent and polarized microscopy. Additionally, emphasis is placed on the theoretical and practical applications of histochemical staining for use in microscopy work. Prerequisite: General Biology or General Zoology.

MEDT 355. Clinical Chemistry I (2). The student is introduced, via lectures and laboratory sessions, to instruments such as spectrophotometers, ion-specific electrodes, flame photometers, the chloridometer and the blood gas analyzer. It is designed to enable the student to apply concepts of instrument calibration and quality control when using the above instruments, as well as to introduce the student to normal values and the biochemical basis for determinations helpful in clinical diagnosis. The course consists of a series of laboratories designed to provide an intensive study of the qualitative and quantitative principles and procedures utilized in the clinical chemistry laboratory. Medical Technology students must take MEDT 355 concurrently with MEDT 383 and MEDT 384. Prerequisite: 16 semester hours of chemistry to include a course in biochemistry.

MEDT 383. Statistics and Quality Control (1). Statistics, population and quality control in allied health disciplines are studied. An introduction to basic statistical concepts such as population, sample, null hypothesis and confidence limits will be presented. The course will introduce ways to represent frequency distribution (histogram, frequency table); measures of location (mean, median, mode, percentile) and dispersion in the frequency distribution (variance, standard deviation). Medical technology students must take MEDT 383 concurrently with MEDT 384 and MEDT 355. Prerequisite: 3 semester hours of college mathematics.

MEDT 384. Electronics and Instrumentation (1). Students will be acquainted with the basic electronic principles and instrumentation used in health care facilities. Lectures focus upon basic electronic principles, electrical components and photometric instruments which include ultraviolet and visible spectrophotometers, fluorometers, flame photometers and atomic absorption spectrophotometers. The laboratory sessions are designed to enable the student to apply concepts presented in lectures. Laboratories include soldering, series and parallel circuit construction, electrical measurements

using a VOM meter, construction of single and dual barrier-layer cell colorimeters and a detailed analysis of the electrical components of a Coleman Junior spectrophotometer. A review of laboratory mathematics is included. Medical technology students must take MEDT 384 concurrently with MEDT 355 and MEDT 383.

MEDT 490. Pathogenic Microbiology (4). Students acquire a basic understanding of the role of microorganisms in the diseases of man with emphasis upon the differentiation and culture of microorganisms; types of disease; modes of disease transmission and prophylactic, therapeutic and epidemiological aspects of pathogens. Laboratory exercises are designed to: characterize the various groups of pathogens; study the action of antibiotics and discuss the processes of sterilization and disinfection. Appropriate laboratories complement the lecture sequence. Prerequisite: General Microbiology or General Bacteriology.

Spring Semester

MEDT 331. Hematology I (3). Students are acquainted with the field of hematology including the very basic subject matter as well as more complex principles. Lecture and lab material will be complementary. This introduction to the hematopoietic systems involves a study of techniques used in clinical hematology laboratories. Testing is performed in a simulated clinical laboratory setting on normal samples. Lecture and laboratory topics include the following: origin, development and function of blood cells, methods of studying blood, normal physiology and metabolism of blood cells; and abnormal red cell and white cell morphology and associated pathological findings with emphasis on the classification of anemias. Prerequisite: MEDT 321.

MEDT 356. Clinical Chemistry II (3). Students are provided the necessary background material and information to enable them to function in a clinical chemistry laboratory. The series of academic lectures is designed to teach a variety of methods used in biochemical determinations. Normal and abnormal physiology are related to tests which enable the physician to diagnose disease states. The course consists of a series of laboratories designed to provide an intensive study of quantitative and qualitative procedures utilized in the clinical laboratory. Concepts discussed in MEDT 355 (Clinical Chemistry I), MEDT 384 (Electronics and Instrumentation) and MEDT 383 (Statistics and Quality Control) provide the foundation for Clinical Chemistry II. Prerequisites: MEDT 355, MEDT 383 and MEDT 384.

MEDT 365. Fundamentals of Transfusion (2). The student is provided with a general survey of the need for, current use of, and patient response to transfusion therapy. Basic physiology affected by blood loss will be ascertained as well as the pathophysiology of the red cells needed for transfusion, both routine and massive. A history of blood transfusion will be discussed along with all other aspects of transfusion therapy, blood preservation, blood donor recruitment, donor requirements, phlebotomy preparation and performance, blood processing, component preparation, red cell freezing, miscellaneous blood products, use of component therapy, plasmapheresis, leukapheresis and granulocyte transfusion, exchange transfusions, transfusion reactions and assessment of the need for transfusions. Consideration will be given to red cell metabolism, hemoglobin structure and function and principles of transfusion therapy in trauma victims, as well as blood bank policy in these emergency transfusions.

MEDT 374. Clinical Microbiology I (4). Students are introduced to clinical microbiology as practiced in a hospital laboratory. The course will familiarize the student with proper collection and handling of specimens, quality control procedures, differentiation of normal flora from pathogenic organisms, identification of pathogens from various clinical specimens, the use of antimicrobial susceptibility testing in the laboratory and the use of commercial and automated procedures in the laboratory. Prerequisite: MEDT 490.

MEDT 491. Immunology (4). Current immunological concepts and their application in the diagnosis, prevention and treatment of infectious and noninfectious disease processes are presented. Appropriate laboratories will be incorporated into the sequence. Prerequisite: MEDT 490.

Senior Year Curriculum

Fall Semester

MEDT 401. Fundamentals of Pathology (2). Condensed and precise presentations will be given on: disease, pathogenesis and diseases in each etiological category; diagnostic procedures used in detection of various diseases; and rationale related to laboratory testing.

MEDT 432. Hematology II (3). This course serves as an introduction to the pathogenesis of hematologic white blood cell disorders, as well as the mechanisms of coagulation and practical applications in pathological processes. Lecture and discussion topics consist of the following: the origin, development and function of white blood cells, methods of studying blood, classification of white blood cell disorders and descriptions of mechanisms involved. Disorders associated with leukemia and leukemoid reactions, plasma cell and plasma protein abnormalities, myeloproliferative disorders and lymphoproliferative disorders will be discussed. The theory and mechanisms of hemostasis, defects of coagulation factors, hereditary telengiectasia, Von Willebrand's disease, thrombocytopathy, thrombasthenia, function and treatment of hemorrhagic disorders and laboratory diagnosis of disorders of hemostasis will be presented. Correlation of clinical disease with abnormal laboratory findings is presented by case studies and group discussion. Laboratory rules and quality control are included along with standardized tests and equipment. Prerequisites: MEDT 321 and MEDT 331.

MEDT 452. Clinical Chemistry III (3). A series of lectures will be presented on topics of current importance to clinical chemistry. The laboratory is designed to reinforce skills and techniques presented in previous coursework and to introduce students to new instruments and concepts. It consists of three rotations, each a week in duration. In the instrumentation rotation (stat lab rotation) the student is responsible for calibration, constructing standard curves, evaluating quality control, maintenance, minor trouble shooting and determining values of unknowns using instruments discussed in previous chemistry courses. The automation rotation introduces the student to automated instruments such as the IL 919, Gilford 3400, Technicon Stat Lyte Analyzer and the PVA-4 Electrolyte Analyzer. The urine analysis rotation consists of a review and extension of concepts, urine chemistry and microscopic examinaton of urine sediment presented in MEDT 321, Microscopy. The student is responsible for reviewing pertinent information discussed in previous courses. Prerequisites: MEDT 355, 356, 383, 384 and 321.

MEDT 464. Immunohematology (3). The historical, practical and theoretical aspects of blood group serology are stressed. Emphasis is placed on the clinical manifestations of the blood group systems, their antigens and antibodies. Lectures and discussions include the following topics: history of blood transfusions; inheritance of blood groups; the ABO blood

group system; the Rh blood group system; transfusion and compatability testing; types and structures of blood group antibodies; the M, N, S and P blood group systems; other blood group systems; blood groups and transfusion; hemolytic disease of the newborn; blood storage and immunology of tissue antigens. A simulated clinical immunohematology laboratory designed to expose students to general conditions and problems of the modern blood bank service also accompanies the course. There are experiences in the following areas: problems relating to the common blood antigen systems and their associated antibodies, donor processing and blood administration, prenatal and postnatal studies, medicolegal issues, transfusion reactions, hepatitis-associated antigen detection, blood component therapy, transfusion reactions and atypical antibody identification. Prerequisite: MEDT 365.

MEDT 472. Clinical Microbiology II (3). Students are acquainted with fungal and parasitic infections. Lecture and laboratory discussions include: clinical manifestations, mechanisms of pathogenesis, cellular morphology and sophisticated techniques employed in the identification of fungi and parasites. Rapid identification systems are utilized in the Mycology section. Prerequisites: MEDT 374 and MEDT 490.

Winter and Spring Semesters

MEDT 403. Research Elective (1). This is an opportunity to perform an independent study in an area of interest. It may be clinically or research oriented. Students will be under the direct supervision of a didactic or clinical instructor and will be required to prepare a report of their achievements.

MEDT 453. Clinical Chemistry Practice (5). This period of instruction is included to enable the student to apply and perfect the procedures learned in clinical chemistry didactic lectures and laboratories. The instruction is conducted in a clinical environment under the auspices of proficient laboratory technologists and provides an opportunity for the student to attain practical knowledge and maximum proficiency. Prerequisites: MEDT 355, 356, 383, 384 and 452.

MEDT 463. Clinical Hematology Practice (5). This course is a rotation through the clinical hematology laboratory which incorporates instruction and oral examinatons in routine hematology, special hematology and coagulation. Applied professional experience includes the use of the most modern methods and instrumentation in the analysis of hematological and coagulation samples. Proficiency in manual and automated methods is required. Prerequisites: MEDT 321, 331 and 432.

MEDT 467. Clinical Immunohematology Practice (3). Applied professional experience in a clinical blood bank laboratory is provided. Instruction and oral examinations are given at the bench in routine and specialized areas of the modern blood bank. Students are expected to demonstrate a high level of proficiency in all areas of blood banking prior to completing the course. Prerequisites: MEDT 365 and MEDT 464.

MEDT 473. Clinical Microbiology Practice (5). This period of instruction enables the student to apply and perfect the various microbiological techniques learned in didactic lectures and laboratories. Instruction is conducted in a clinical environment under the auspices of proficient laboratory technologists and provides an opportunity for the student to attain practical knowledge in laboratory procedures. Prerequisites: MEDT 374, 472 and 490.

MEDT 474. Clinical Immunology Practice (2). The student applies and perfects the immunological and serological procedures utilized in the clinical laboratory. It is conducted in the clinical environment under the direction of proficient technologists. Prerequisites: MANA 311, MANA 312 and MEDT 491.

Faculty

Anthony, Ronald L.
Associate Professor and Director of Clinical Immunology. BA, Susquehanna University; PhD, University of Kansas.

Atcherson, Mark
Instructor. BS MT (ASCP), University of Maryland.

Baer, Martha L.
Counselor and Instructor. BA, Indiana University.

Caldwell, Barbara S.
Instructor. BS, MT (ASCP) College of Allied Medical Professions, School of Medical Technology, Ohio State University.

Cartwright, Willie Q.
Assistant Professor and Assistant Director. BS, Howard University; MT, United States Army Medical Service School; MS, State University of New York at Buffalo.

Cherng, Ai-Shuan S.
Assistant Professor. BS, SC (ASCP), National Taiwan University; MT, Health Department of Florida; MS, Indiana University.

Ciesla, Betty E.
Instructor. BS, Philadelphia College of Pharmacy and Science; MT (ASCP), SH, St. Joseph School of Medical Technology.

Constantine, Niel T.
Assistant Professor. BS, MT (ASCP) University of Maryland; PhD, University of Maryland.

Harmening-Pittiglio, Denise
Assistant Professor and Assistant Director. BS, MT (ASCP), University of Maryland; MS, University of Maryland; PhD, University of Maryland.

Hill, Elizabeth S.
Assistant Professor and Special Assistant to the Director. BS, MT (ASCP), Temple University Medical School; MA, Central Michigan University.

Jiji, Rouben
Associate Professor. MD, Royal College of Medicine, Baghdad, Iraq.

Knoblock, Edward C.
Associate Professor. AB, Western State College of Colorado; MS, University of Maryland.

Krause, Sandra G.
Instructor. AA, Prince George's Community College; BS, MT (ASCP), University of Maryland.

Kula, Theodore J.
Assistant Professor. BS, University of Dayton; MT (ASCP), St. Joseph's Hospital of Lexington, Kentucky; MS, University of Dayton; PhD, University of Kentucky.

McMichael, Joseph L.
Assistant Professor. BS, MT (ASCP), University of Maryland; MS, University of Maryland.

Pawar, Vinayak B.
Assistant Professor and Assistant Director. BS, University of Bombay; MT (ASCP), Saint Frances Hospital School of Medical Technology; M (ASCP), Boone County Hospital; MS, University of Missouri; PhD, University of Kentucky.

Ross, Sherrill
Instructor. BS, University of Maryland; MS, M (ASCP), Thomas Jefferson University.

Rowland, Sharon S.
Instructor. BA, University of Kansas; BS, MT (ASCP), University of Maryland; MA, University of Kansas.

Simon, Michael A.
Instructor. BS, MT (ASCP), University of Maryland.

Smith, Andrew G.
Professor. BS, Pennsylvania State University; PhD, University of Pennsylvania.

Wyrick-Glatzel, Janis
Instructor. BS, MT (ASCP) University of Maryland.

Program Officials

Medical Director
Rasmussen, Peter, Professor of Pathology and Director of Hospital Laboratory Services. MD, Temple University.

Program Director
Masters, Jason M., Associate Professor. BS, High Point College; MS, Sul Ross State; PhD, University of Maryland.

Academic Coordinator
Wilson, Johanna E., Assistant Professor and Assistant Director. BS, MT (ASCP), University of Maryland; MS, University of Maryland.

Clinical Coordinator
Reynolds, Terry R., Instructor. BS, MT (ASCP), University of Maryland.

For additional information:

Johanna E. Wilson, MS, MT (ASCP)
Academic Coordinator (528-7663)

Martha L. Baer, BA
Academic Advisor (528-7535)
(College Park hours by appointment: 454-2540)

Program in Medical Technology
University of Maryland School of Medicine
Room 603, Allied Health Professions Building
32 South Greene Street
Baltimore, Maryland 21201

Philosophy

The Physical Therapy Department of the University of Maryland School of Medicine seeks, with every available resource, to educate physical therapy students, to maintain active programs for professional growth of faculty and to support research and continuing education in an effort to enhance the academic and clinical state of the art. As part of the health care delivery team, students and faculty strive to provide the best possible health care and service to the community and the state.

Accreditation

Since 1956, the University of Maryland has offered a two-year professional program in physical therapy. Completion of a two-year preprofessional program, and subsequently the professional program, results in a Bachelor of Science degree and a Certificate of Proficiency in Physical Therapy. The University of Maryland is accredited by the Middle States Association of Colleges and Secondary Schools and the physical therapy curriculum is approved by the Council on Medical Education of the American Medical Association in collaboration with the American Physical Therapy Association and by the American Physical Therapy Association. A graduate is eligible to become a member of the American Physical Therapy Association and to apply for professional licensure in Maryland and in other states.

Clinical Affiliations

Clinical education is an essential part of the total physical therapy program offered at the University of Maryland. Currently, there are more than 100 centers being used for experiences in acute/general, chronic/rehabilitation, orthopaedic, sports medicine, pediatrics and community health settings. These centers are located over a wide geographic area throughout the United States but primarily in the northeastern corridor.

During 21 to 23 weeks of full-time clinical affiliation the student has the opportunity to utilize what has been learned in didactic courses and to implement therapeutic, evaluative and interpersonal skills in the care of patients.

Preprofessional Curriculum

Freshman-Sophomore Curricula. Preprofessional education consists of liberal arts and science courses which the student may take within the University of Maryland system or at any other accredited college or university. These courses have been selected to fulfill the professional prerequisites and also to provide a wide variety of career options without subsequent loss of credit should a student elect another course of study. All preprofessional courses are required and must be completed prior to matriculating in the professional program.

	Semester Hour Credits
Mathematics (Two college level courses which should be algebra and trigonometry OR any one course in calculus and one elective.)	6
Statistics (General or introductory statistics to include at least mean, mode, median, random variables, variance, confidence limits and binomial probability.)	3
Chemistry (General college chemistry, with lab.)	8

Physics (General college physics, with lab.)	8
Zoology or Biology (One course in general zoology or biology for science majors, with lab and one course in human or comparative anatomy, with lab.)	8
Social Science (Afro-American studies, anthropology, economics, government and politics, urban studies, sociology, geography.)	3
Psychology (One introductory or general course and one of developmental, educational or personality study.)	6
English Composition (Students with approved advanced credit or exemption may substitute a three-credit elective.)	3
Speech, Public Speaking or Communications (Students with one year of speech in high school may substitute a three-credit elective upon furnishing a transcript.)	3
Arts & Humanities (History, literature, foreign language, philosophy, appreciation of: art, music, drama, dance.)	6
Electives (No more than two credits of non-theory or skills may be applied. Review or introductory courses may not be used if they are below the required level in biology, chemistry, physics, English and mathematics. Coursework in anatomy, physiology, kinesiology, nutrition and other related areas is recommended, but selection may be made in any area of individual interest.)	6
Total 60 semester hour credits or 90 quarter hour credits	

Articulation Programs. The professional physical therapy program has designated articulation with the following institutions, whereby courses are predetermined and transferable:

- Allegany Community College
- Anne Arundel Community College
- Catonsville Community College
- Cecil Community College
- Charles County Community College
- Chesapeake College
- The Community College of Baltimore
- Dundalk Community College
- Essex Community College
- Frederick Community College
- Frostburg State College
- Garrett Community College
- Hagerstown Junior College
- Harford Community College
- Howard Community College
- Montgomery College
- Prince George's Community College
- University of Maryland: Baltimore County, College Park and Eastern Shore campuses
- Western Maryland College

An articulation publication is available in the counseling center of each of the community colleges. Information regarding the three campuses of the University of Maryland, as well as Frostburg State College, can be found in their respective catalogs.

Admissions Policies

An Admissions Committee is charged with annually selecting 52 students for the junior class which begins in June. Final selection is based on the following: grade-point average in the preprofessional curriculum courses only, results of an Allied Health Professions Admissions Test, information obtained from a Personal Data Form, letters of reference and a personal interview.

Admissions Criteria

Minimum qualifications at the junior level are a 2.7 GPA for the 60 prerequisite credits in which no grade of less than "C" is acceptable and a score of 50 or better on the Allied Health Professions Admissions Test. In addition, at least 18 credits must be completed in the math and science area by the application deadline of December 31.

There is no exclusion based on sex, age, race, ethnic background or prior completion of another academic degree. Nonresident candidates are limited to a maximum of 20 percent. It is, therefore, reasonable to assume that at least a "B" average would be needed to be considered for selection. Prior work or volunteer experience in a health-related facility, especially physical therapy, is strongly recommended.

Admission Procedures

Admission Application. To obtain an application, write to the Office of Admissions, University of Maryland at Baltimore, Room 326, Baltimore Student Union, 621 West Lombard Street, Baltimore, Maryland 21201 or phone (301) 528-7480. Applications become available after October 1 preceding the year of admission. Deadline date for receipt of applications is December 31, and supporting documents (transcripts) must be received by February 1 of the year of admission. Applicants should submit either a catalog or a photocopy of a catalog description of all prerequisite courses completed at a college or university outside the state of Maryland. This information is vital to processing the application.

Allied Health Professions Admissions Test. To obtain an Allied Health Professions Admissions Test application, write to the Psychological Corporation, 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Only scores of a test taken prior to February 1 will be used for June selection. Request that your scores on the test be mailed to the Department of Physical Therapy. Personal Data and Reference Forms will be mailed to those applicants achieving the highest scores based on both the grade-point average in required courses already completed and scores on the Allied Health Professions Admissions Test. Plans for completing any remaining required courses in the spring semester will need to be documented.

Interviews will be held for a select number of applicants who will be so notified. Based on criteria as outlined, candidates will be selected both for the 52 positions and for an alternate list. Students will be notified of their status before the end of May.

Financial Information

1984 - 1985 Tuition and Fees

	Beginning Summer	*Fall Semester*	*Spring Semester*
Matriculation Fee (new students)	$ 20.00		
Tuition: In-State	408.00	$ 578.00	$ 578.00
Tuition: Out-of-State	408.00	1,854.00	1,854.00
Instructional Resources Fee		23.00	23.00
Supporting Facilities Fee	20.00	60.00	60.00
Student Activities Fee		9.50	9.50
Student Health Fee		25.00	25.00
Student Liability Insurance		26.06	—
Hospital Insurance/Blue Cross (required if not covered elsewhere)			
Individual		277.87	277.87
Two Persons		596.14	596.14
Family		621.04	621.04
Dormitory Fee		830.00	830.00
Graduation Fee (senior year)			20.00
Student Government Association Fee		3.00	3.00
Clinical Education			
Junior summer, 3 weeks	136.00		
Senior summer, 6 weeks	272.00		
Approximate cost of books, uniforms, etc. per year	350.00		

(Costs as listed are subject to change.)

Students should plan their finances according to a full academic schedule. The beginning summer of the junior year consists of a concentrated six-week session and there is a three-week affiliation in the following summer.

Financial Aid

Financial aid is granted on the basis of demonstrated need. Through a combination of grants, scholarships, long- and short-term loans and part-time employment, students may receive assistance in meeting educational expenses. In addition to the resources of the School of Medicine, outside funding agencies make financial assistance available to qualified students. For information on financial aid, contact:

Student Financial Aid Office
University of Maryland at Baltimore
621 West Lombard Street
Baltimore, Maryland 21201

There is a February 15 priority date for consideration for campus-based funds and deadline date for Maryland State Scholarship Board funds. Students interested in MSSB scholarships are urged to file early so as not to miss the deadline.

Housing

The University of Maryland at Baltimore offers both apartment and dormitory style accommodations for students. For information contact:

Division of Residence Life
University of Maryland at Baltimore
621 West Lombard Street
Baltimore, Maryland 21201

Academic Policies

Grading

Students are responsible for their academic work and progress. To progress satisfactorily, the quantitative and qualitative requirements of each course in the Department of Physical Therapy must be met. Faculty will assist as needed or requested.

The following symbols comprise the department's grading system.

Symbol	*Quality Points*	*Definition*
A	4	Excellent mastery of the subject; outstanding scholarship.
B	3	Good mastery of the subject; good scholarship.
C	2	Acceptable mastery of the subject; usual achievement expected.
D	1	Borderline understanding; marginal performance. This grade does not represent satisfactory progress toward a degree and the course must be repeated.
F	0	Failure to understand the subject; unsatisfactory performance.
I	0	Incomplete. This is an exceptional grade given only to students whose work has been qualitatively satisfactory when, due to illness or other circumstances beyond their control, they have been unable to complete some small portion of the coursework satisfactorily. The student will remove the "I" by completing work assigned by the instructor by the end of the next semester in which the student is enrolled at UMAB. Otherwise, the "I" becomes equivalent to an "F" grade.
WD	0	Withdrawal from the program.
AU	0	Under certain circumstances a student may register to audit a course. To have the audit notation appear on the transcript, the student will be required to attend a definite number of classes.
P/F	0	Pass/Fail indicates satisfactory or unsatisfactory completion of the course requirements. This grading will be used only in those courses designated by the department.

Class Attendance

Students are accountable for all work missed due to absence. With a justifiable absence an instructor may assist the student in making up work at a time that will not interfere with the progress of other students. Absenteeism from classes requiring student participation, such as laboratory sessions, group discussions, reports or demonstrations may be used in the overall evaluation of the student. A grade of "I" may be given until such work has been satisfactorily completed. Attendance in clinical education courses is mandatory.

Academic Probation

If students do not achieve a 2.0 average for a given semester, they will be placed on academic probation. Students will be academically dismissed at the end of a second consecutive semester if they receive less than a 2.0 average.

Students may also be dismissed if they do not achieve an average high enough in the semester following academic probation to bring their cumulative average in the professional portion of the program to 2.0.

Advancement and Graduation

If a student receives a "D" grade in a professional course, the faculty will make recommendations to the department chairman as to how this grade may be removed.

An "F" grade may not be removed from a student's transcript. At the discretion of the faculty and the department chairman, a student may be allowed to repeat the course at UMAB or take an equivalent course at another university.

Before a student will be allowed to progress to the junior clinical affiliation, the senior year and the senior clinical affiliations, the following must prevail: grades of "C" or better in all courses taken to date and faculty consensus of student's professional competency.

Before a student will be certified for graduation the following must prevail: satisfactory completion of all required courses with grades of "C" or better and faculty consensus that the student is professionally competent.

Dismissal

The faculty of the Department of Physical Therapy reserves the right to ask the Dean of the School of Medicine to dismiss a student from the university for any of the following reasons: failure to meet academic requirements; infraction of university rules; possessing a physical or mental health problem which interferes with the student's competence in practicing physical therapy; behavior which displays a lack of professionalism; or a failure to observe the moral and ethical standards of the physical therapy profession.

Readmission following Dismissal

Any student who wishes to be readmitted may petition the faculty for consideration by submitting all supporting documents to the Admissions Committee for processing and referral to the faculty. Readmission requires a ⅔ majority vote of the faculty.

Credit by Examination

Courses within the department may, in certain cases, be satisfactorily completed under "credit by examination" procedures. These procedures, along with detailed rules and regulations, appear in a handbook given to all physical therapy students.

School of Medicine Catalog

Since physical therapy students are part of the School of Medicine, they are advised to avail themselves of the general and applicable information found in the School of Medicine catalog.

Professional Curriculum (82-84 Semester Hour Credits)

Junior-Senior Curricula

Professional education in physical therapy is offered only at the Baltimore City campus of the University of Maryland (UMAB). A student must make separate application and submit to an admission process for the professional portion. Admission to the University of Maryland system as a freshman or sophomore does not guarantee admission to the professional program, since competition is keen and enrollment is limited to 52 positions.

Academic advisement is available to students enrolled on the UMCP and UMBC campuses. Other interested students should contact the secretary for admissions at the Baltimore City campus or, in the case of students at one of Maryland's public community colleges, seek information about required courses at their school's counseling center.

Students may receive credit by achieving percentile scores of at least 50% on the College Level Examination Placement (CLEP) tests. Students should request that official results of these tests be sent to the Department of Physical Therapy for credit evaluation if the scores have not been posted on their transcript.

Junior Year, Summer Semester (6 SHC)

PTAB 400. Human Anatomy I (4). A study of the morphology of the human upper extremity and thorax through lecture and cadaver dissection. Emphasis is placed on the musculoskeletal and neuromuscular systems. Consideration is given to clinical entities. (30 lec., 90 lab.)

PTAB 402. Human Physiology I (2). Survey of human physiology related to body systems. Major emphasis placed on cell physiology, nervous system, muscular system and physiology of bones. (30 lec.)

Junior Year, Fall Semester (16 SHC)

PTAB 331 Patient Care Procedures (1). Specific patient care procedures related to physical therapy, inhalation therapy and nursing are studied. Included are isolation procedures, sterile techniques, emergency situations which may occur in clinical settings, catheterization, respirators, specialized beds, injections, tracheotomies, suctioning, improvised equipment, nutrition, bandaging and vital signs. (8 lec., 21 lab.)

PTAB 341. Physical Therapy Theory and Practice I (1). Palpation and manipulation of soft tissue for the purpose of evaluating anatomical structures responsible for restriction of normal range of motion or inhibition of functional activity. Includes basic physiological effects of massage, application of massage techniques and the principles of peripheral joint manipulation. (8 lec., 21 lab.)

PTAB 342. Physical Therapy Theory and Practice II (2). Therapuetic use of ultraviolet energy (actinotherapy), heat (thermotherapy) and cold (cryotherapy) by conduction, convection, radiation and conversion. Includes physical principles, physiological effects, precautions and rationale for use. (15 lec., 90 lab.)

PTAB 401. Human Anatomy II (4). Continuation of Human Anatomy I with emphasis on abdomen, lower extremity, head and neck. (30 lec., 90 lab.)

PTAB 403. Human Physiology II (2). Continuation of Human Physiology I in relation to the four major systems with consideration given to skin physiology. (45 lec.)

PTAB 405. Pathology (2). Basic principles in the study of disease and injury with application to the various systems of the body. Includes observation of autopsies and pathological specimens. Lectures are integrated with Human Anatomy and Human Physiology. (30 lec.)

PTAB 406. Neuroanatomy and Neurophysiology (4). A coordinated presentation of the structure and function of the human nervous system with emphasis on the central nervous system and sensory receptors. Clinical applications are included. Students engage in dissection of the human brain, examine microscopic sections of the brainstem and spinal cord and experiment with functional aspects of the nervous system. (45 lec., 45 lab.)

Junior Year, Winter Session (3 SHC)

PTAB 323. Professional Relations I (2). Introduction to the concepts of professionalism and ethical behavior. Professional organizations and mechanisms of regulation such as accreditation, certification and licensure are discussed. Basic medical terminology and written/verbal communications are included. Visits to facilities are scheduled to allow students to observe clinical practice. (15 lec., 24 clinic)

PTAB 380. Research and Design I (1). Discussion of experimental method, literature search techniques, review of basic statistics, data acquisition and reduction tools. Students begin a group research project. (15 lec.)

Junior Year, Spring Semester (18 SHC)

PTAB 300. Human Growth and Development (3). Characteristics of normal growth and development from fetal life to old age, with emphasis on physiological considerations of growth, development and maturation of the infant and young child. Includes considerations and patterns of abnormal development. (45 lec.)

PTAB 301. Biomechanics and Kinesiology (3). A detailed study of human motion with emphasis on mechanical and functional aspects. Includes biomechanical measurements, calculations, functional anatomy and body mechanics under both normal and pathological conditions. (30 lec., 45 lab.)

PTAB 330. Manual Muscle Testing and Range of Motion (2). Principles and techniques of performing, recording and analyzing manual muscle and range of joint motion tests are presented. Correlations with posture and function are included. (15 lec., 45 lab.)

PTAB 332. Gait Analysis (1). Introduction to the development of human locomotion, gait cycle description, displacement changes, muscular activity and floor reaction analysis. Includes qualitative and quantitative measurements and evaluation of normal and selected abnormal gait parameters. Basic elements of gait training are introduced. (8 lec., 21 lab.)

PTAB 333. Basic Rehabilitation (2). Introduction to the multidisciplinary approach of comprehensive care for the handicapped. Included are principles and techniques of gait training, transfers, activities of daily living, prescription and use of assistive devices and wheelchairs. (15 lec., 45 lab.)

PTAB 343. Physical Therapy Theory and Practice III (3). Part I: Electrotherapy covers the physics and physiological effects of low frequency alternating and the percutaneous application of these currents for assessment and therapeutic use. Part II: Introduction to physiological assessment of the neuromuscular system using techniques of electromyography including nerve conduction velocity recording. Biofeedback rationale and use are also covered. (30 lec., 45 lab.)

PTAB 344. Therapeutic Exercise I (2). Application of theory of exercise and study of developmental principles for the prevention, recognition and treatment of physical disabilities. Includes positioning, range of motion exercises and traditional exercise programs. (15 lec., 45 lab.)

PTAB 404. Human Physiology III (2). Study of physiological adaptations to stress within normal and pathological states. Includes concepts of work, exercise, energy expenditure, oxygen debt and body composition. Emphasis is placed on cardiovascular, musculoskeletal and respiratory functions related to physical activity, normal growth and development, the aging process, and prevention of illness. (15 lec., 45 lab.)

Junior Year, Summer Clinic (2 SHC)

PTAB 324. Clinical Education I (2). Three weeks of full-time clinical experience. Opportunity to develop proficiency in therapeutic and evaluative procedures learned in the first academic year. (approximately 105 clinic hours)

Senior Year, Fall Semester (17 SHC)

PTAB 445. Therapeutic Exercise II (4). Application of neurophysiological and developmental principles to exercise techniques designed to facilitate normal neuromuscular function. Use of cold, vibration, compression, traction and resistance is included. Proprioceptive neuromuscular facilitation techniques along with specific treatment approaches developed by Knott, Bobath, Rood and Brunnstrom are examined and practiced. (30 lec., 90 lab.)

PTAB 451. Clinical Science—Psychiatry (2). A review of appropriate basic science followed by medical lectures on the etiology and management of psychological and psychiatric problems. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients with psychological manifestations. (30 lec.)

PTAB 460. Clinical Science—Orthopaedics (4). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of the, musculoskeletal system. Medical aspects and basic orthopaedic principles are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients. (30 lec., 90 lab.)

PTAB 464. Clinical Science—Respiratory Disorders and Rheumatology (1). Part I—Respiratory Disorders: A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of the respiratory system. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment

of patients. (6 lec., 6 lab.) Part II—Rheumatology: A review of appropriate basic science followed by medical lectures on the etiology and management of rheumatological conditions. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients. (6 lec., 6 lab.)

PTAB 465. Clinical Science—Cardiovascular Disorders (1). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of the cardiovascular system. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of cardiac patients. (7 lec., 8 lab.)

PTAB 467. Clinical Science—Neurology and Skeletal Muscle Disorders (4). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital and acquired pathological conditions of the central and peripheral nervous systems. Medical aspects will be correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients with upper and lower motor neuron lesions. (45 lec., 45 lab.)

PTAB 481. Research and Design II (1). Continuation of Research and Design I. Essentials of a research proposal, data acquisition, data reduction, data analysis and the pilot study are covered. Students will continue to work independently on the group research project begun in Research and Design I. (independent study)

Senior Year, Winter Session (3 SHC)

PTAB 423. Professional Relations II (1). Introduction to health care administration specifically relating to physical therapy. Includes personnel and fiscal management, federal and state regulations, legal considerations and community health. (15 lec.)

PTAB 452. Clinical Science—Dermatology/Burns (1). A review of appropriate basic science followed by medical lectures on problems involving the skin with special emphasis on burns. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients with various types of burns. (11 lec., 12 lab.)

PTAB 482. Research and Design III (1). Continuation of Research and Design II. Essentials of a research report, including journal format and oral presentations at scientific meetings, are covered. Group research projects are to be completed and presented to the faculty. (15 lec. and independent study)

Senior Year, Spring Semester (13-15 SHC)

PTAB 350. Clinical Science—Geriatrics (1). A review of appropriate basic science followed by the study of aging characteristics. Included are physical, psychological and socio-economic aspects with emphasis on a clinical view of symptomatology, diagnostic and treatment procedures. Also includes visiting a geriatric center. (8 lec., 21 lab.)

PTAB 462. Clinical Science—Amputee/Prosthetics (2). A review of appropriate basic science followed by medical lectures on the etiology and management of congenital, traumatic and acquired pathological amputation. Medical aspects will be correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of patients. (15 lec., 45 lab.)

PTAB 466. Clinical Science—Pediatrics (1). A review of appropriate basic science followed by medical lectures on growth, developmental anomalies, congenital and acquired musculoskeletal, respiratory and other medical problems of the pediatric patient. Medical aspects are correlated with a physical therapy problem-solving approach to the evaluation, program planning and treatment of the pediatric patient (8 lec., 24 lab.)

PTAB 488. Special Topics in Physical Therapy (1-3). Lecture/laboratory demonstrations on topics presented by specialists in given areas and/or a problem-solving experience which is

commensurate with student's interest and ability. Topics presented and number of credits are arranged by the department chairman. Open to special students as well as senior physical therapy students. (One special topics course is required.)

PTAB 425. Clinical Education II (4). The first senior full-time clinic lasts for six weeks—from March to mid-April. Students are responsible for patient evaluation, assessment, treatment, program planning and coordination of patient care with other existing programs. Hours are determined by the clinic and may vary between 35 and 40 per week.

PTAB 426. Clinical Education III (4). The second senior full-time clinic lasts for six weeks—from mid-April through the end of May. Student responsibilities are the same as in Clinical Education II. Hours are determined by the clinic and may vary between 35 and 40 per week.

Summer after Senior Year (4 SHC)

PTAB 427. Clinical Education IV (4). Third senior full-time clinic. Student has the option of going for six or eight weeks beginning the first part of June. The extension of eight weeks would be by mutual desire and consent of student and clinic. The student is expected to function on the level of a staff physical therapist by this time and be capable of providing total comprehensive physical therapy care. Hours are determined by the clinic and may vary between 35 and 40 per week.

Faculty

Chairman

Hardiman, Clarence W.
Associate Professor, BS, University of Florida, 1949; Certificate in Physical Therapy, Duke University, 1950; MS, Florida State University, 1954; PhD, 1964; LPT.

Associate Professor

Hobart, Donald J.
BS, Western Maryland College, 1962; MA, University of Maryland, 1967, PhD, 1972.

Assistant Professors

Alon, Gad
Certificate in Physical Therapy, Wingate Institute, Israel, 1968; BS, University of Maryland, 1972; MS, Medical College of Virginia, 1975; PhD, University of Maryland, 1979.

Cohen, Susan H.
BA, Bennington College, 1965; MA, Catholic University of America, 1971.

Herdman, Susan J.
BA, Vassar College, 1969; Certificate in Physical Therapy, University of Pennsylvania, 1970; PhD, 1976, LPT.

Myers, Rose S.
BS, Springfield College, 1965; Certificate in Physical Therapy, University of Pennsylvania, 1966; MSEd, University of Pennsylvania, 1971; PhD, University of Maryland, 1979.

Instructors

Anderson, Paul
BA, Concordia College, 1969; MA University of Maryland, 1978.

Bloyer, Rebecca G.
BS, Western Maryland College, 1975; MS, Duke University, 1978; LPT.

DeWitt, Heather
BS, University of Southern California, 1972; LPT.

Schank, Judith
BS, University of Maryland, 1973; MS, Virginia Commonwealth University, 1980; LPT.

Tepper, Steven H.
BS, University of Maryland, 1979; LPT.

Department of Physical Therapy
University of Maryland School of Medicine
Room 310, Allied Health Professions Building
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Baltimore, Maryland 21201
(301) 528-7720, 7721

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Ruth H. Young, DSW
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School of Medicine Administration

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Marjorie P. Wilson, BS, Bryn Mawr College, 1945; MD, University of Pittsburgh, 1949.

Associate Dean for Administration
James I. Hudson, BA, Cornell University, 1948; MD, Johns Hopkins University, 1952.

Associate Dean for Admissions
Ellen G. McDaniel, Carnegie-Mellon University, 1962; MD, University of Michigan, 1966.

Associate Dean for Fiscal Affairs
Gregory F. Handlir, BS, Loyola College, Baltimore, 1969; MBA, 1973.

Associate Dean for Medical Education and Special Programs
Murray M. Kappelman, BS, University of Maryland, 1951; MD, 1955.

Associate Dean for Student Affairs
Bernice Sigman, MD, University of Maryland, 1960; MS, Washington University, 1966.

Assistant Dean for Continuing Medical Education
Jack L. Mason, BS, Mansfield State College, 1960 MEd, Pennsylvania State University, 1961; PhD, Syracuse University, 1969.

Assistant Dean for Operations
Gregory Robinson, BS, University of Maryland, Baltimore County, 1973; MS, Morgan State University, 1977.

Assistant Deans for Student Affairs
Robert L. Harrell, Jr., BS, Hampton Institute, 1961; PhD, Iowa State University, 1966.

Herbert L. Muncie, BS, University of Georgia, 1968; MD, Medical College of Georgia, 1971.

S. Michael Plaut, BA, Adelphi University, 1965; PhD, University of Rochester, 1968.

Gary D. Plotnick, AB, Johns Hopkins University, 1962; MD, University of Maryland, 1966.

STUDENT ROSTER

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Barnett, Michael/Johns Hopkins University
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Baskett, Kathleen/Towson State University
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Burns, Peter/University of Maryland, College Park
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Due, Christopher/Johns Hopkins University

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Jordon, Earlene/University of Maryland, College Park
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Kahan, David/University of Maryland, College Park
Kaplan, Keith/University of Maryland, College Park
Kaufman, Marc/University of Maryland, College Park
Kim, Hyun/Johns Hopkins University
King, Francisco/D. C. Teachers College
King, Rita/University of Maryland, College Park
Kinney, Joanne/University of Maryland, College Park
Knight, John/Brigham Young University
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Lazarou, Spiros/Johns Hopkins University
Lesser, Allen/University of Maryland, College Park
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Mc Bride, Mark/University of Virginia
Mc Clean, Sharon/University of Oklahoma
Mc Cormack, Sharon/Loyola College
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Mauterer, David/Haverford College
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Morin, Thomas/University of Maryland, Baltimore County
Morris, Michael/University of Missouri
Mossman, Victoria/Stephens College
Mukherjee, Diane/University of Maryland, College Park
Murphy, Christine/Catholic University of America
O'Keefe, Kevin/Towson State University
O'Keefe, David/Manhattan College
Olsen, Stephanie/Brigham Young University
Patterson, Patricia/University of Maryland, College Park
Patz, Jr., Edward/Duke University
Platto, Michael/Georgetown University
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Porter, Kenneth/University of Maryland, College Park
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Quigley, Patricia/Emory University
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Rose, Jacqueline/University of Maryland, Baltimore County
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Van Besien, Robert/Johns Hopkins University
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Wagner, Matthew/Washington College
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Woodyear, Dawna/Carnegie Mellon University
Yeagle, Stephen/Johns Hopkins University
Zlotnick, Abby/University of Maryland, College Park

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Althoff, Marilyn/University of Maryland, Baltimore County
Andros, Thomas/Brigham Young University
Barschack, Scott/Haverford College
Bartle, Bryan/University of Maryland, College Park
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Beachy, Natalie/Goucher College
Beine, Melba Jean/Michigan State University
Benitez/Robert/Western Maryland University
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Cook, Colleen/New York State Agricultural - Life Sciences
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Daum, Catherine/Davidson College
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Flowers, Brian/University of Maryland, Baltimore County
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Fosko, Scott/University of Notre Dame
Fox, Christopher/Massachusetts Institute of Technology
Franklin, Richard/George Washington University
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Froede, Craig/University of Maryland, College Park
George, Stephen/University of Maryland, Baltimore County
Gershon, Raphael/University of Maryland, College Park
Gold, David/University of Maryland, College Park
Goose, Pam/University of Kentucky
Gordon, Stuart/William and Mary College
Gosey, Michael/University of Maryland, College Park
Hammond, Albert/Virginia Wesleyan College
Han, Sangwoon/University of Maryland, College Park
Harris, Stephanie/University of Maryland, College Park
Hasslinger, Brian/University of Delaware
Hellman, Jeffrey/University of Maryland, College Park
Hochstein, Craig/University of Maryland, College Park
Hofmeister, Kathryn/Bryn Mawr College
Hogsten, Paul/Western Maryland College
Hoofnagle, Robert/University of Maryland, Baltimore County
Howse, Robert/Drexel University
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Huang, Abby/Cornell University
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Jaklitsch, Michael/Tulane University
Johnson, Spences/Johns Hopkins University
Johnson, Wallace/Bucknell University
Joshua, Sudhir/University of Maryland, College Park
Juskelis, Edward/University of Maryland, Baltimore County
Kabat, Karen/State University of New York at Binghamton
Kanaan, Basma/University of Maryland, College Park
Keiser, Philip/Morgan State University
Kelly, Ruthanne/Georgetown University
Kelly, Thomas E./Dickinson College
Kelly, Thomas J./College of the Holy Cross
Kieliszek, Francis/Johns Hopkins University
Kim, Joseph/Cornell University
Kleiman, Lee/Vermont University
Kosnick, Elizabeth, Loyola College
Kurgansky, Dennis/University of Maryland, College Park
Kuvshinoff, Boris,/University of Maryland, Eastern Shore
Lally, Terri/Johns Hopkins University
Lavoi, Karen/Virginia Polytechnical Institute
Lee, Eunkyn/University of Maryland, College Park
Legler, Glenn/Johns Hopkins University
Lewis, Daniel/Cornell University
Li, Anne Ling/Indiana University
Liao, Teresa/Iowa State University
Liberto, Joseph/Loyola College
Lifson, Michael/University of Maryland, College Park
Lindbeck, George/West Virginia University
Lomonico, Marion/Loyola College
Lynch, Ronald/Oakwook College
Manley, Giles/Towson State Universtiy
McEachrane, Marsh/McMaster University
McLaughlin, Jeffery/University of North Carolina
Miller, Raymond/Cedarville College

Miller, Samuel/University of Maryland, College Park
Miller, Vicki/Bridgewater College
Milsteen, Scott/University of Maryland, College Park
Moore, Valerie/Washington College
Morrow, Gregory/University of Maryland, Baltimore County
Murray, Denise/University of Maryland, College Park
Musselman, David/Gettysburg College
Neagle, Charles/Vanderbilt University
Nemarich, Judith/Bucknell University
Nesbitt, Carol/Virginia Polytechnical Institute
Ney, Gershon/Yeshiva University
Nichols, Timothy/University of Maryland, College Park
Niner, Joseph/University of Maryland, College Park
Novalis, Peter/Columbia University
Oldach, David/University of Maryland, College Park
Ordman, Joan/University of Maryland, College Park
Parker, Donna/McGill University
Parker, Michael/Johns Hopkins University
Pavolos, Stephan/Johns Hopkins University
Perlsweig, Mark/Washington University
Phelan, William/Towson State University
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Poulton, Scott/Delaware University
Price, Gregory/University of Maryland at Baltimore
Putnam III, Adin Tyler/University of Maryland, College Park
Resnick, Steven/Emory University
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Roby, Robert/University of Maryland, College Park
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Rothenberg, Mitchell/Johns Hopkins University
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Rowen, Judith/University of Maryland, College Park
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Rush, Lawrence/University of Maryland, College Park
Saini, Ashima/American University
Saunders, Barry/University of North Carolina
Schwab, Jonathan/Amherst College
Schwender, Lisa/Johns Hopkins University
Seen, Kenneth/University of Maryland, Baltimore County
Semer, Nadine/University of Maryland, College Park
Sheikh, Asad/Boston University
Sina, Abbas/Loyola College
Skolka, James//University of Maryland, Baltimore County
Smith, Mark/University of Maryland, College Park
Smith, Mark/University of Maryland, College Park
Sneeringer, Richard/Johns Hopkins University
Stern, Gary/Western Maryland College
Strauss, Richard/University of Maryland, College Park
Supplee, Scott/Williams College
Taylor, Debra/Rutgers University
Tippett, Dean/Loyola College
Todd, Nevin/Davidson College
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Tsao, Henry/University of Maryland, College Park
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Wu, Chou Ying/University of Maryland, College Park
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Awan, Jennifer/Kenyon College
Baker, Melinda/University of Maryland, Baltimore County
Baker, Robert/Brandeis University
Barker, John/Wesleyan University
Belenker, Stuart/University of Maryland, Eastern Shore
Berger, Bary/University of Maryland, College Park
Birmingham, William/Johns Hopkins University
Breiner, June/University of Virginia
Brook, Michael/University of Michigan
Bullock, Mark/University of Maryland, Baltimore County
Chen, Henry/Johns Hopkins University
Cheng, Peter/University of Maryland, College Park
Chia, Lawrence/University of Maryland, College Park
Cinoman, Michael/University of Maryland, College Park
Classen, John/University of Maryland, College Park
Cockerill, Mark/Western Maryland College
Cornell, Dan/George Mason University
Cummings, Laurie/University of Maryland, College Park
Dalton, Thomas/Emory University

Damiano, Michael/Franklin and Marshall
Dellon, Steven/University of Maryland, College Park
Devine, Kathleen/University of Maryland, College Park
Dewberry, Robert/Loyola College
Dhindsa, Hardeep/University of Maryland, College Park
Dietrich, Annemarie/Georgetown University
Dimarzio, Lisa/University of Maryland, College Park
Earl, Cynthia/Hampton Institute
Epstein, Rachael/Tulane University
Evans, John/University of Maryland, Baltimore County
Fertsch, Lorraine/University of Maryland, Baltimore County
Fischler, Adam/Emory University
Fitch, Charles/University of California - San Diego
Flanagan, Michael/University of Maryland, College Park
Flaton, Janet/University of Delaware
Flynn, Daniel/University of Virginia
Forbes, Eleanor/University of Maryland, Eastern Shore
Frankel, Heidi/George Washington University
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Freeman, Richard/Cornell University
Garner, John/University of Maryland, College Park
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Gasser, Seth/Franklin and Marshall
Gerhardt, Marguerite/University of Maryland, College Park
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Hsiao, Tony/University of Maryland, College Park
Hubberman, Pamela/University of Maryland, Baltimore County
Humberson, Cora/Goucher College
Israel, Lawrence/University of Pennsylvania
Jenkins, Laine/Loyola College
Joffe, Marshall/Harvard University
Kastner, Robert/Towson State University
Kim, Gene/University of Maryland, Eastern Shore
Kleman, James/University of Delaware
Kurzweil, Karen/Duke University
Kyser, Betty/University of Maryland, College Park
Lee, Steven/University of Maryland, Eastern Shore
Lee-Young, Alfred/Loyola College
Leslie, Martha/Cornell University
Leslie, Robin/University of California - San Diego
Lin, Frank/University of Maryland, College Park
Lyon, Kathleen/Rutgers University
Macedo, Pedro/Catholic University of America
Malinda, Paul/Loyola College
Maresca, G. Michael/West Virginia University
Mazonson, Anne/Brown University
Mazur, Jonathan/University of Maryland, College Park
Mehra, Bela/University of Maryland, Eastern Shore
Mercer, Cheryl/Towson State University
Meyers, Roy/Haverford College
Millman, Eric/University of Maryland, Baltimore County
Monteferrante, Mark/Johns Hopkins University
Moy, Raymond/University of Maryland, College Park
Mulford, Thomas/Mount St. Mary's College
Multhopp, Heidi/Goucher College
Murphy, Jennifer/College of Notre Dame
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Ostrow, Todd/Cornell University
Ottaviano, Yvonne/McGill University
Otto, James/Bridgeport University
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Rehm, Jeffrey/Duke University
Robinson, Shawn/Brown University
Rose, Gavin/Johns Hopkins University
Rubin, David/William and Mary College
Safir, Julian/Duke University
Schaffer, Scott/University of Maryland, College Park
Seetharaman, Patabi/Bucknell University
Serafis, Anthony/Towson State University
Seymour, Thomas/Loyola College
Sifford, Sharon/Franklin and Marshall
Silverman, Michael/Duke University
Slade, Joy/Loyola College
Snow, Jeffrey/University of Maryland, College Park

Stahl, Jan/State University of New York at Albany
Stelzer, Shelly/University of Maryland, College Park
Stone, Roger/University of Maryland, College Park
Stouffer, George/Bucknell University
Strahl, Mary/University of Maryland, College Park
Stroud, Leonardo/Howard University
Suholet, Susan/University of Pennsylvania
Tarantino, Paul/Loyola College
Taylor, Daniel/University of San Francisco
Tom, Patricia/Loyola College
Truong, Le Mu/University of Maryland, College Park
Wandishin, Susan/Western Maryland College
Watson, Margo/College of Wooster
Waxman, Phyllis/University of Pennsylvania
Weber, Anne/University of Maryland, College Park
Weiner, Ian/Emory University
Weiss, Stephen/Swarthmore College
West, Denise/University of Maryland, Baltimore County
White, David/University of New Hampshire
Wicks, George/University of Maryland, Baltimore County
Wilson, Thomas/Dartmouth College
Winner, Jay/University of Maryland, College Park
Wong, Shelly/Johns Hopkins University
Woytowitz, Donald/University of Maryland, College Park
Wu, Chi Mei/University of Maryland, College Park
Wu, Meng-Shin/University of Maryland, College Park
Yang, Shu-Yin/University of California
York, Kathleen/University of Maryland, College Park

Class of 1988

Aarons, Alan/George Washington University
Adams, Sarah/Trinity College
Aiello, David/Loyola College
Allen, Beverly/Amherst College
Baldwin, Edward/University of Pennsylvania
Barton, Judith/Indiana University
Bauk, Daniel/Brown University
Behrens, Hollis/Drury College
Berul, Charles/Bucknell University
Best, Yvette/Howard University
Birt, Adriane/University of Pennsylvania
Bloom, Miriam/Johns Hopkins University
Blumenfeld, Lisa/University of Pennsylvania
Bruzzese, Joseph/University of Maryland, College Park
Bunker, Nancy/Loyola College
Campbell, Robert/University of Maryland, College Park
Carani, Lois/University of Maryland, College Park
Carr, Thomas/John Carroll University
Cheng, Lawrence/Emory University
Chisolm, Margaret/University of Maryland, Baltimore County
Chiu, William/George Washington University
Choo, Eugene/Minneapolis College of the Arts
Cohen, Bonnie/University of Maryland, Baltimore County
Corbin, John/Johns Hopkins University
Coulson, Carol/Chestnut Hill College
Cox, Joyce/College of Notre Dame
Danzer, Brett/University of Virginia
Decandido, Paula/University of Maryland, College Park
Dominguez, Jose/University of Maryland, College Park
Drew, Erin/Howard University
Dukehart, Matthew/Towson State University
Eiband, Doan/Purdue University
Eisenberg, Howard/University of Maryland, College Park
Elksnis, Stephen/Vanderbilt University
Fang, Daniel/University of Pennsylvania
Fechter, Joel/University of Maryland, College Park
Fedalei, Albert/Gettysburg College
Fenton, Kathleen/Johns Hopkins University
Ferris, James/Loyola College
Ferro, Fernando/Loyola College
Finan, Eugene/Loyola College
Fonder, Cynthia/Brandeis University
Forrest, Brenda/Columbia Union College
Forrester, Leighton/Johns Hopkins University
Fraiman, Mark/University of Virginia
French, Audrey/Middlebury College
Freidman, Jeanette/University of Pennsylvania
Georges, Nicholas/University of Virginia
Ginsburg, Lisa/University of Maryland, Baltimore County
Gordon, Margaret/George Washington University
Gordon, Richard/University of Massachusetts
Greene, Adam/Swarthmore College
Gross, Scott/University of Maryland, College Park
Gustafson, Keith/University of Maryland, College Park
Hammond, Nancy/Johns Hopkins University
Hansen, George/University of California - San Diego
Heacock, Gregg/Johns Hopkins University
Hill, Michelle/Dillard University
Henly, Susan/Goucher College
Ho, Helen/Philadelphia College of Pharmacy
Hoang, Huy/Massachusetts Institute of Technology
Howell, Clewell/University of Maryland, Baltimore County

Huang, Abbott/University of Pennsylvania
Ingleton, Rosem/New York University
Kaiser, Jeffrey/University of Chicago
Katz, Stephen/University of Maryland, College Park
Kilkowski, Kim/University of Maryland, College Park
Kim, Robert/Harvard University
Koons, Jay/Butler University
Kotz, Kenneth/Duke University
Kreger, Donald/University of Maryland, College Park
Lancaster, Luke/Duke University
Lawrence, Marc/Brown University
Leahy, Maureen/Loyola College
Lester, Norman/University of Maryland, Eastern Shore
Levin, Jonathan/Haverford College
Levin, Roger/Trinity College
Levy, Howard/University of Maryland, College Park
Libre, Peter/Yale University
Lindbeck, Eric/University of Maryland, College Park
Ling, Marilyn/Williams College
Liu, Cornelia/Princeton University
Lohrmann, Wolfgang/Catholic University of America
Luxenberg, Daniel/University of Maryland, College Park
Magat, Aaron/University of Virginia
Mays, Christopher/Catholic University of America
McFadden, Diane/Stockton State College
McHugh, Carol/Johns Hopkins University
McLean, Robert/Williams College
Mitchell, Joyce/Coppin State College
Modlin, Saud/University of Maryland, College Park
Moore, Dorothy/Towson State University
Murray, Joan/Syracuse University
Naharin, Boaz/University of Maryland, College Park
Nguyen, Loan/Juniata College
Pamfilis, Stanley/Loyola College
Panholzer, Lynn/University of Maryland, College Park
Patten, Richard/Colby College
Phelps, Charles/University of Maryland, College Park
Philip, Sures/George Washington University
Pitts, Robert/Colorado College
Polis, Nicholas/Eckerd College
Pollack, Stuart/Johns Hopkins University
Pomerantz, Stephen/Emory University
Rajagopalan, Radhika/Johns Hopkins University
Rollins, Rochelle/Wellesley College
Rosen, Bonnie/University of Rochester
Rosenweig, Jeffrey/Brandeis University
Ross, Jeffrey/Duke University
Ross, Mary Jo/Utica College of Syracuse
Royal, Gail/University of Massachusetts
Royse, Kimberly/Warren Wilson College
Ruland, Charles/William and Mary College
Sandford, Janelle/Johns Hopkins University
Scarberry, Robert/West Virginia University
Schendel, Kevin/Loyola College
Schlaffer, Eileen/University of Maryland, College Park
Schnitzer, David/University of Maryland, College Park
Schwartz, Joseph/University of Maryland, College Park
Shepperd, Scott/Princeton University
Short, Letitia/Carnegie - Mellon University
Singh, Navnet/Howard University
Sklar, Geoffrey/University of Maryland, College Park
Slay, Versie/Livingston University
Snyder, Steven/University of Virginia
Stokes, Curtis/University of Maryland, Baltimore County
Suriani, Robert/Adelphi University
Syme, Jackie/University of Maryland, Baltimore County
Taavon, Richard/Duke University
Tam, Kenny/University of Maryland, College Park
Tao, Jeff/Johns Hopkins University
Tepper, Bradford/University of Maryland, College Park
Thompson, Rebecca/University of Maryland, Baltimore County
Thompson, Robert/University of Maryland, Baltimore County
Tidler, Lillian/Stanford University
Titi, Mark/University of Maryland, Baltimore County
Torf, Alane/Johns Hopkins University
Tritch, Todd/Andrews University
Tzou, Norman/University of Maryland, Eastern Shore
Volk, Charles/University of Virginia
Wapner, Katherine/University of Maryland at Baltimore
Weintraub, Michelle/Stanford University
Weisman, Paul/Tulane University
Weiss, Helena/Swarthmore College
Wilson, Michael/Ursinus College
Winkler, Juerg/State University of New York at Binghamton
Wolf, Monford/Loyola College
Wolff, Gregg/Towson State University
Wymer, James/University of Vermont

Faculty, Student and Institutional Rights and Responsibilities for Academic Integrity

Preamble

At the heart of the academic enterprise are learning, teaching and scholarship. In universities these are exemplified by reasoned discussion between student and teacher, a mutual respect for the learning and teaching process, and intellectual honesty in the pursuit of new knowledge. In the traditions of the academic enterprise, students and teachers have certain rights and responsibilities which they bring to the academic community. While the following statements do not imply a contract between the teacher or the university and the student, they are nevertheless conventions which the university believes to be central to the learning and teaching process.

Faculty Rights and Responsibilities

1. Faculty shall share with students and administration the responsibility for academic integrity.
2. Faculty are accorded freedom in the classroom to discuss subject matter reasonably related to the course. In turn they have the responsibility to encourage free and honest inquiry and expression on the part of students.
3. Faculty are responsible for the structure and content of their courses, but they have the responsibility to present courses that are consistent with their descriptions in the university catalog. In addition, faculty have the obligation to make students aware of the expectations in the course, the evaluation procedures and the grading policy.
4. Faculty are obligated to evaluate students fairly and equitably in a manner appropriate to the course and its objectives. Grades shall be assigned without prejudice or bias.
5. Faculty shall make all reasonable efforts to prevent the occurrence of academic dishonesty through the appropriate design and administration of assignments and examinations, through the careful safeguarding of course materials and examinations, and through regular reassessment of evaluation procedures.
6. When instances of academic dishonesty are suspected, faculty shall have the right and responsibility to see that appropriate action is taken in accordance with university regulations.

Student Rights and Responsibilities

1. Students shall share with faculty and administration the responsibility for academic integrity.
2. Students shall have the right of inquiry and expression in their courses without prejudice or bias. In addition, students shall have the right to know the requirements of their courses and to know the manner in which they will be evaluated and graded.
3. Students shall have the obligation to complete the requirements of their courses in the time and manner prescribed and to submit to evaluation of their work.
4. Students shall have the right to be evaluated fairly and equitably in a manner appropriate to the course and its objectives.
5. Students shall not submit as their own work any work which has been prepared by others. Outside assistance in the preparation of this work, such as librarian assistance, tutorial assistance, typing assistance or such assistance as may be specified or approved by the instructor is allowed.
6. Students shall make all reasonable efforts to prevent the occurrence of academic dishonesty. They shall by their own example encourage academic integrity and shall themselves refrain from acts of cheating and plagiarism or other acts of academic dishonesty.
7. When instances of academic dishonesty are suspected, students shall have the right and responsibility to bring this to the attention of the faculty or other appropriate authority.

Institutional Responsibility

1. Campuses or appropriate administrative units of the University of Maryland shall take appropriate measures to foster academic integrity in the classroom.
2. Campuses or appropriate administrative units shall take steps to define acts of academic dishonesty, to insure procedures for due process for students accused or suspected of acts of academic dishonesty and to impose appropriate sanctions on students guilty of acts of academic dishonesty.

3. Campuses or appropriate administrative units shall take steps to determine how admission or matriculation shall be affected by acts of academic dishonesty on another campus or at another institution. No students suspended for disciplinary reasons at any campus of the University of Maryland shall be admitted to any other University of Maryland campus during the period of suspension.

(Adopted May 8, 1981, by the Board of Regents.)

The University of Maryland Position on Acts of Violence and Extremism Which are Racially Ethnically, Religiously or Politically Motivated

The Board of Regents strongly condemns criminal acts of destruction or violence against the person or property of others. Individuals committing such acts at any campus or facility of the university will be subject to swift campus judicial and personnel action, including possible expulsion or termination, as well as possible state criminal proceedings.

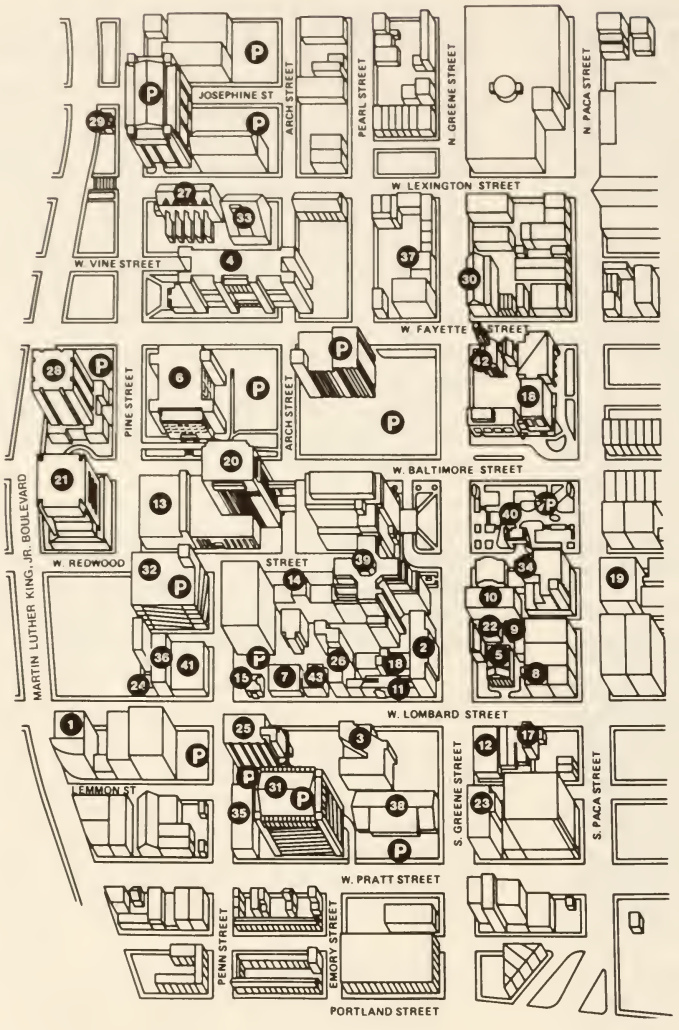
The University of Maryland is an equal opportunity institution with respect to both education and employment. The university's policies, programs and activities are in conformance with pertinent federal and state laws and regulations on nondiscrimination regarding race, color, religion, age, national origin, sex and handicap. Inquiries regarding compliance with Title VI of the Civil Rights Act of 1964, as amended, Title IX of the 1972 Education Amendments, Section 504 of the Rehabilitation Act of 1973, or related legal requirements should be directed to the Office of the Chancellor.

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the University of Maryland. Changes are effected from time to time in the general regulations and in the academic requirements. There are established procedures for making changes—procedures which protect the institution's integrity and the individual student's interest and welfare. A curriculum or graduation requirement, when altered, is not made retroactive unless the alteration is to the student's advantage and can be accommodated within the span of years normally required for graduation. When the actions of a student are judged by competent authority, using established procedure, to be detrimental to the interest of the university community, that person may be required to withdraw from the university.

The campus has since January 1975 attempted to identify and eliminate as rapidly as possible and wherever feasible, physical barriers and safety hazards to handicapped persons involving campus buildings, parking places and other facilities.

CAMPUS MAP

University of Maryland at Baltimore



University & *Campus-Related* Buildings

1. Administration Building
   737 W. Lombard St.
2. Allied Health Professions Building
   32 S. Greene St.
3. Baltimore Student Union
   621 W. Lombard St.
4. *(Walter P.) Carter Center*
   630 W. Fayette St.
5. Davidge Hall
   522 W. Lombard St.
6. Dental School
   Hayden Harris Hall
   666 W. Baltimore St.
7. Dunning Hall
   636 W. Lombard St.
8. East Hall
   520 W. Lombard St.
9. Gray Laboratory
   520 W. Lombard St.
10. Greene Street Building
    29 S. Greene St.
11. Health Sciences Building
    610 W. Lombard St.
12. Health Sciences Library
    111 S. Greene St.
13. Howard Hall
    660 W. Redwood St.
14. Institute of Psychiatry and
    Human Behavior
    645 W. Redwood St.
15. *Kelly Memorial Building*
    650 W. Lombard St.
16. Law School, Lane Hall
    500 W. Baltimore St.
17. Lombard Building
    511 W. Lombard St.
18. Maryland Institute for
    Emergency Medical Services
    Systems Shock Trauma Center
    22 S. Greene St.
19. *Medical Faculty Foundation*
    Diagnostic Center
    419-421 W. Redwood St.
20. Medical School
    Frank C. Bressler
    Research Building
    655 W. Baltimore St.
21. Medical School Teaching Facility
    10 S. Pine St.
22. Medical Technology
    31 S. Greene St.
23. *Methadone Program*
    121 S. Greene St.
24. *Newman Center*
    712 W. Lombard St.
25. Nursing School
    655 W. Lombard St.
26. Parsons Hall
    622 W. Lombard St.
27. Pascault Row
    651-655 W. Lexington St.
28. Pharmacy Hall
    20 N. Pine St.
29. Pine Street Station
    210 N. Pine St.
30. Poe School
    520 W. Fayette St.
31. Pratt Street Garage and
    Athletic Facility
    646 W. Pratt St.
32. Redwood Hall
    721 W. Redwood St.
33. *Ronald McDonald House*
    635 W. Lexington St.
34. School of Social Work and
    Community Planning
    525 W. Redwood St.
35. *State Medical*
    Examiner's Building
    111 Penn St.
36. Storage Building
    710 W. Lombard St.
37. Tuerk House
    106 N. Greene St.
38. University Health Center
    120 S. Greene St.
39. University of Maryland
    Medical System
    22 S. Greene St.
40. University Plaza and Garage
    Redwood and Greene Sts.
41. *Western Health Center*
    700 W. Lombard St.
42. *Westminster Hall*
    515 W. Fayette St.
43. Whitehurst Hall
    624 W. Lombard St.